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Supplemental Environmental Assessment No. CA060-97-2

Southern California Gas Company

Natural Gas Transmission Line 6902
El Centro to Mexicali

Imperial County, California

January 29, 1997

Prepared for:
Bureau of Land Management
California Desert District
U.S. Department of Interior
6221 Box Springs Boulevard
Riverside, CA 92507-0741

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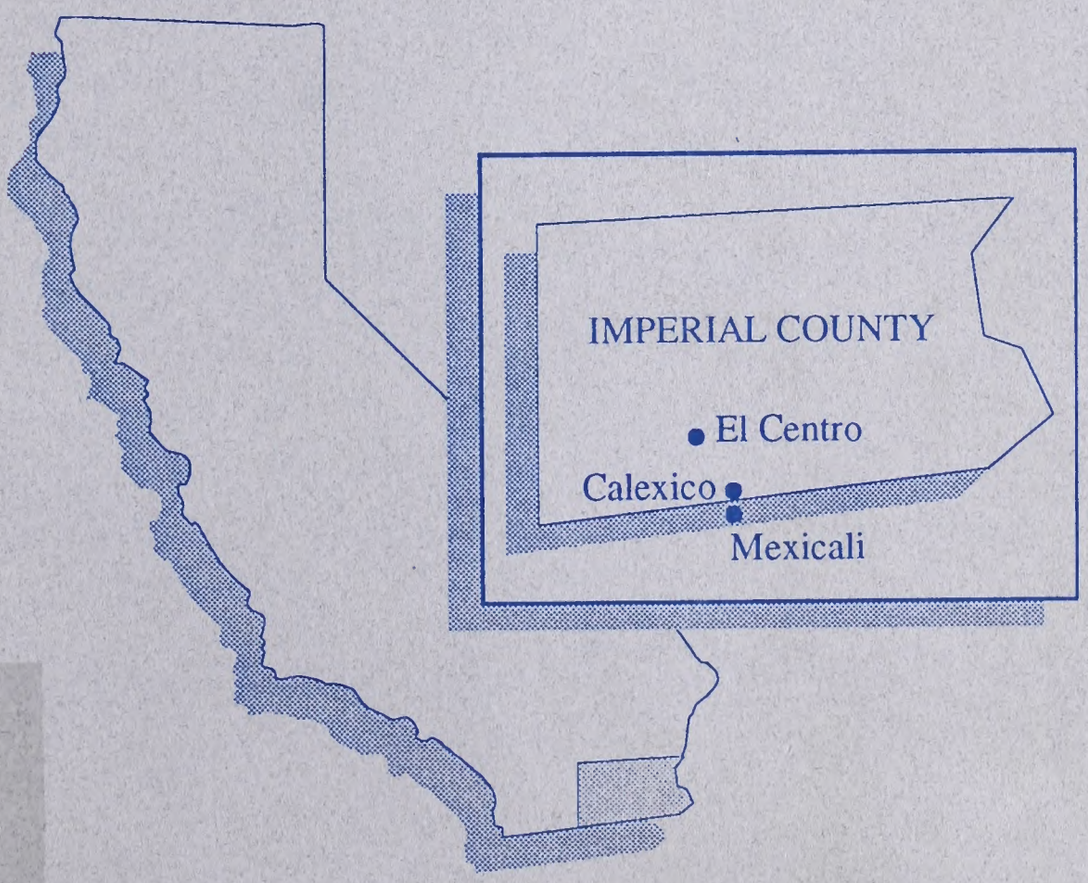
SCG632



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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
California Desert District Office
6221 Box Springs Boulevard
Riverside, California 92507-0714

CA-30646
1790, 2880
(CA-063.2)

JAN 2 9 1997

Dear Reader:

In September 1993 we released for public review an Environmental Assessment (EA). The purpose of that EA was to address the impacts of a natural gas pipeline proposed by the Southern California Gas Company (SCG). Part of this project involved replacing an existing line between Hayfield, in Riverside County, and Niland, in Imperial County, California. The remainder of this proposed project was to extend this line south from Niland through Imperial County to Mexicali, Mexico. This project, as proposed, was approved in January 1994.

Based on further evaluation of the existing gas system in Mexicali, another border crossing location, which constitutes another change from the previously evaluated crossing points, has been requested by SCG. Therefore, in compliance with the National Environmental Policy Act (NEPA), the purpose of this Supplemental EA is to evaluate this proposed change. It should be noted that this Supplemental EA is tiered to the original EA prepared for SCG's Line 6902 and thus does not address those portions of this project, as previously approved, that will not be changed.

Please review this Supplemental EA, and send written comments by February 28, 1997, to:

USDI, Bureau of Land Management
6221 Box Springs Blvd.
Riverside, CA 92507-0741
ATTN: Stephen L. Johnson

It is important that we receive your comments in writing since there will be no public meetings held on this proposed modification. All comments received by February 28 will be evaluated and considered. Those who provide written comments or request to be notified will be informed of our decision.

Sincerely,

for

Henri R. Bisson
District Manager

TABLE OF CONTENTS

		PAGE
SUMMARY		iii
I.	INTRODUCTION	1
	A. BACKGROUND ON PREVIOUSLY APPROVED ROUTES	1
	B. REGULATORY CONTEXT	8
	C. PROJECT PURPOSE AND NEED	8
	D. JURISDICTIONAL AND PERMIT-GRANTING AGENCIES	9
II.	PROJECT DESCRIPTION	11
	A. PROJECT LOCATION	11
	B. NO-ACTION ALTERNATIVE	14
	C. LAND REQUIREMENTS	14
	D. PIPELINE CONSTRUCTION	14
	E. OPERATION AND MAINTENANCE	20
III.	ENVIRONMENTAL SETTING	22
	A. LAND USE	22
	B. SOCIOECONOMIC CONSIDERATIONS	23
	C. VISUAL RESOURCES	23
	D. TRAFFIC	23
	E. VEGETATION AND WILDLIFE	24
	F. GEOLOGY, SOILS, AND SEISMICITY	27
	G. HYDROLOGY	29
	H. NOISE	29
	I. AIR QUALITY	30
	J. CULTURAL RESOURCES	32
	K. PALEONTOLOGICAL RESOURCES	33
	L. HEALTH AND SAFETY	33
IV.	POTENTIAL IMPACTS AND MITIGATION MEASURES	34
	A. LAND USE	34
	B. SOCIOECONOMIC CONSIDERATIONS	36
	C. VISUAL RESOURCES	36
	D. TRAFFIC	37
	E. VEGETATION AND WILDLIFE	38
	F. GEOLOGY, SOILS, AND SEISMICITY	42
	G. HYDROLOGY	44
	H. NOISE	45
	I. AIR QUALITY	48
	J. CULTURAL RESOURCES	50
	K. PALEONTOLOGICAL RESOURCES	51
	L. HEALTH AND SAFETY	52

V. CUMULATIVE IMPACTS AND GROWTH INDUCEMENT 54
A. INTRODUCTION 54
B. REGIONAL DEVELOPMENT 54
C. CUMULATIVE IMPACTS 55
D. GROWTH INDUCEMENT 57

VI. REFERENCES 59
A. LITERATURE CITED 59
B. PERSONS CONTACTED DURING REPORT PREPARATION 60

LIST OF FIGURES

PAGE

Figure 1 - Regional Location 2
Figure 2 - Pipeline Route 3
Figure 3 - Border Crossing Location 12
Figure 4 - Metering Station 13
Figure 5 - All American Canal Directional Bore Profile 18
Figure 6 - Regional Geology and Seismicity 28
Figure 7 - Noise Levels Typical of Construction Equipment 46

LIST OF TABLES

PAGE

Table 1 - Environmental Impact Summary iv
Table 2 - Comparison Between Proposed Project and Previously Approved Projects . . . 6
Table 3 - Regulatory Context 9
Table 4 - Potentially Occurring Special-Status Species 25

SUMMARY

This Supplemental Environmental Assessment (EA) evaluates the environmental effects of the proposed international border crossing at the southern terminus of the already permitted Southern California Gas Company (Gas Company) line 6902. The new, proposed project is called the Line 6902 El Centro to Mexicali Project. The proposed 14.4-mile-long pipeline would use 12-inch-diameter pipe and have a maximum capacity of 40 million cubic feet per day. The U.S. Bureau of Land Management (BLM) is the Lead Agency for this Supplemental EA.

The original EA for SoCalGas Line 6902, prepared for the BLM, was issued in September 1993. This proposed revision to the 77.6-mile-long line 6902 would increase net mileage 1.5 miles and move the border crossing 1.7 miles to the east. Net environmental effects of the revised project would roughly duplicate those of the equivalent terminal segment of the original project. No significant differences in impacts were found between the two versions. Both versions would traverse through largely agricultural areas along county road and canal easements. The southern 12.9 miles of the original project is treated as the No-Action Alternative for this Supplemental EA.

Regulatory Context. The BLM, California Desert District, was the lead National Environmental Policy Act (NEPA) agency for this Supplemental EA and was also the lead agency for the original EA. The U.S. Marine Corps and the U.S. Department of the Navy were cooperating agencies for the original EA. The Decision Record for the original EA (CA-30646) was issued on February 3, 1994. The BLM is again the lead agency. The Gas Company currently seeks authorization under Section 3 of the Natural Gas Act from the Federal Energy Regulatory Commission (FERC) for the revised border crossing portion. The upstream facilities are subject to the jurisdiction of the California Public Utilities Commission (CPUC). California Environmental Quality Act (CEQA) review of this modified project is not required, because no discretionary actions would be required from state or local agencies.

Project Purpose and Need. The proposed project would supply natural gas to future customers south of the international border in the Mexicali area. The border crossing location was revised at the request of the Mexican customer.

The route would originate at the intersection of Dogwood and Chick (a.k.a. Dannenberger) roads, traverse east along Chick Road to Meloland Road, turn south on Meloland Road to McCabe Road, turn east on McCabe Road to Barbara Worth Road, turn south along Barbara Worth Road, turn east along Carr Road, turn south along the Ash 2 Drain, and turn east along the access road on the north side of the All American and New Briar canals. The pipeline would then turn south, be bored under the two canals, and terminate at the southern tie-in at the international border. A 35-by-100-foot metering station would be constructed immediately north of the All American and New Briar canals.

Impacts and Mitigations. The revised pipeline alignment would be entirely within existing disturbed areas, such as county road and canal rights-of-way. Most project impacts would be associated with construction and would be temporary. All impacts would be mitigated to below the level of significance. No cumulatively significant impacts have been identified. Table 1 summarizes potential impacts and mitigation measures associated with the proposed, revised border crossing location segment. These impacts are not additive to those cited in the original EA, but are delineated here to illustrate the impacts of the revised border crossing phase of the pipeline project.

Table 1 - Environmental Impact Summary
SoCalGas Line 6902 El Centro to Mexicali Project
Imperial County, California

Environmental Category	Potential Impacts	Mitigation Measures	Impacts (Before Mitigation/After Mitigation)
A. LAND USE	Construction would disturb a maximum total of 9.2 acres of agricultural land for up to two months.	Working strip shall be confined to existing road and canal easements; metering station in a canal easement; reimburse farmers.	Not significant/ not significant.
	Traffic, visual, and noise impacts would occur to 14 rural residences along the route during construction.	See Traffic, Visual, and Noise sections.	Significant short-term/not significant.
	A 35 by 100-foot meter station would be constructed near the southern terminus.	The Gas Company shall enter into an agreement with the landowners to reimburse them.	Significant/not significant.
	Minority and low-income residences and businesses would be temporarily affected by noise, air quality, and visual impacts during construction.	The BLM shall notify all affected parties of the proposed project and the availability of the Supplemental Environmental Impact Report. The Gas Company shall provide addresses.	Not significant, but notification mandated by Executive Order/ not significant.
B. SOCIO-ECONOMIC	Population in Imperial County would increase by up to 25 people during the construction period.	None required.	Not significant/ not significant.
	Project would create 25 jobs for pipeline workers for up to two months.	None required.	Not significant/ not significant.
	Construction crew would decrease available temporary housing by up to 2% for up to two months.	Workers would rent houses or trailers in addition to hotels.	Not significant/ not significant.
	Local trade would increase temporarily.	None required.	Not significant/ not significant.

Environmental Category	Potential Impacts	Mitigation Measures	Impacts (Before Mitigation/After Mitigation)
	A 35 by 100-foot meter station would be constructed near the southern terminus.	The Gas Company shall enter into an agreement with the landowners to reimburse them.	Significant/ not significant.
C. VISUAL RESOURCES	Construction debris could degrade appearance of working strip.	Gas Company shall clean up debris and conduct follow-up inspections.	Locally potentially significant/ not significant.
	Construction removal of ruderal vegetation would alter site's appearance.	Vegetation removal shall be minimized.	Not significant/ not significant.
	Pipeline valves and meters would be visible above ground.	Exposed facilities shall be painted earthtone color.	Locally potentially significant/not significant.
D. TRAFFIC	Minor short-term construction-related traffic delays and minor increases in peak-hour congestion.	Gas Company to provide appropriate signage, protection of open trenches, and repairs to affected roadway.	Locally significant/ not significant.
E. VEGE-TATION AND WILDLIFE	Potential harassment of wildlife by pets; collection or destruction of native plants and wildlife.	Pets on-site and collection or destruction of native plants or wildlife shall not be allowed.	Significance undetermined/ not significant.
	Vehicle activity and placement of storage areas in sensitive habitat off of the working strip.	Construction shall be confined to cleared, designated construction zone. Storage areas shall be confined to cleared, non-sensitive habitat.	Significant/ not significant.
	Entrapment of wildlife in pipes.	Pipe shall be inspected before moving.	Significant/ not significant.
	Attraction of wildlife by improper deposition of trash; introduction of hazardous materials; construction debris on-site.	Proper disposal of trash. Proper handling of hazardous materials. Post-construction cleanup.	Significance undetermined/ not significant.

Environmental Category	Potential Impacts	Mitigation Measures	Impacts (Before Mitigation/After Mitigation)
	Accidental fires.	Fire management plan shall be prepared.	Significance undetermined/ not significant.
	Discharge of hydrostatic test water in sensitive habitat.	Hydrostatic test water shall be discharged into cleared, non-sensitive habitat.	Significant/ not significant.
	Take of adult burrowing owls and destruction of nests with juveniles and eggs.	Conduct a preconstruction survey to identify owls/ nests at risk. In nonbreeding season, install one-way doors on nests and fill other burrows at risk. In breeding season, fill empty burrows at risk and avoid destruction of active nests. A worker education program shall be implemented for each of the above topics.	Significant/not significant.
G. GEOLOGY, SOILS, AND SEISMICITY	Pipeline would be subject to corrosive soils.	Pipeline coating and cathodic protection to protect pipe.	Significant/not significant.
	Spoil piles along trenches would be subject to erosion for up to two months.	Gaps in spoil piles shall be provided to allow for adequate drainage.	Short-term significant/not significant.
	Pipeline would intersect the main trace of the Imperial Fault with potential for ground rupture and compressional stress.	Pipeline shall be designed to eliminate or reduce adverse effects from moderate to severe seismic shaking, maintenance crews shall inspect potential ruptures, and crews shall be trained to respond appropriately.	Significant/not significant.

Environmental Category	Potential Impacts	Mitigation Measures	Impacts (Before Mitigation/After Mitigation)
H. HYDROLOGY	Hydrostatic test water would be discharged by spreading or returned to canals after use.	Water shall be disposed of in a manner acceptable to RWQCB and county.	Not significant/ not significant.
	Discharge of hydrostatic test waters could cause erosion of unlined canal.	Rate of discharge water shall be controlled and erosion control measures shall be employed.	Locally significant/not significant.
I. NOISE	Short-term construction noise would likely exceed county CNEL standards for 1-3 days and cause disturbance to the 14 rural residences and three small businesses along the route.	Inform noise receptors of pipeline schedule, minimize use of loud signals, and muffle equipment.	Locally significant/not significant.
	Annual blowdown events at venting locations would cause short-term disturbance for the local residents and future Port of Entry facility.	Silencer shall be used.	Locally significant/not significant.
J. AIR QUALITY	Project construction, vehicles, and equipment emissions would exceed NOx and PM_{10} daily and quarterly thresholds.	Incorporate fugitive dust control measures; maintain equipment; use electric equipment instead of internal combustion power equipment, as feasible; use gasoline powered instead of diesel equipment where feasible.	Locally significant/not significant.
K. CULTURAL RESOURCES	Historic or prehistoric resources not expected to be encountered.	If sensitive resources are encountered, excavation shall stop. The finds shall be evaluated and a data recovery program shall be implemented, if required.	Not significant/ not significant.

I. INTRODUCTION

This Supplemental Environmental Assessment (EA) evaluates the environmental effects of proposed extension of the Southern California Gas Company's (Gas Company) Line 6902 El Centro to Mexicali Project in Imperial County, California. The Gas Company proposes to extend facilities to the U.S.-Mexico border to supply natural gas to Mexicali, Mexico, and vicinity (Figure 1). The U.S. Bureau of Land Management (BLM) is the Lead Agency for this Supplemental EA.

The proposed Line 6902 El Centro to Mexicali Project is for a 14.4-mile-long, 12-inch-diameter natural gas transmission pipeline from the City of El Centro through unincorporated portions of Imperial County to the international border with Mexico. The north end would tie into the Gas Company's line 6001. The southern terminus would extend to immediately across the international border with Mexico. Facilities built on the Mexican side of the border and built by Mexicans would tie into the proposed Line 6902 El Centro to Mexicali Project. The initial capacity of the pipeline would be 40 million cubic feet (MMcf) per day at the international border.

A. BACKGROUND ON PREVIOUSLY APPROVED ROUTES

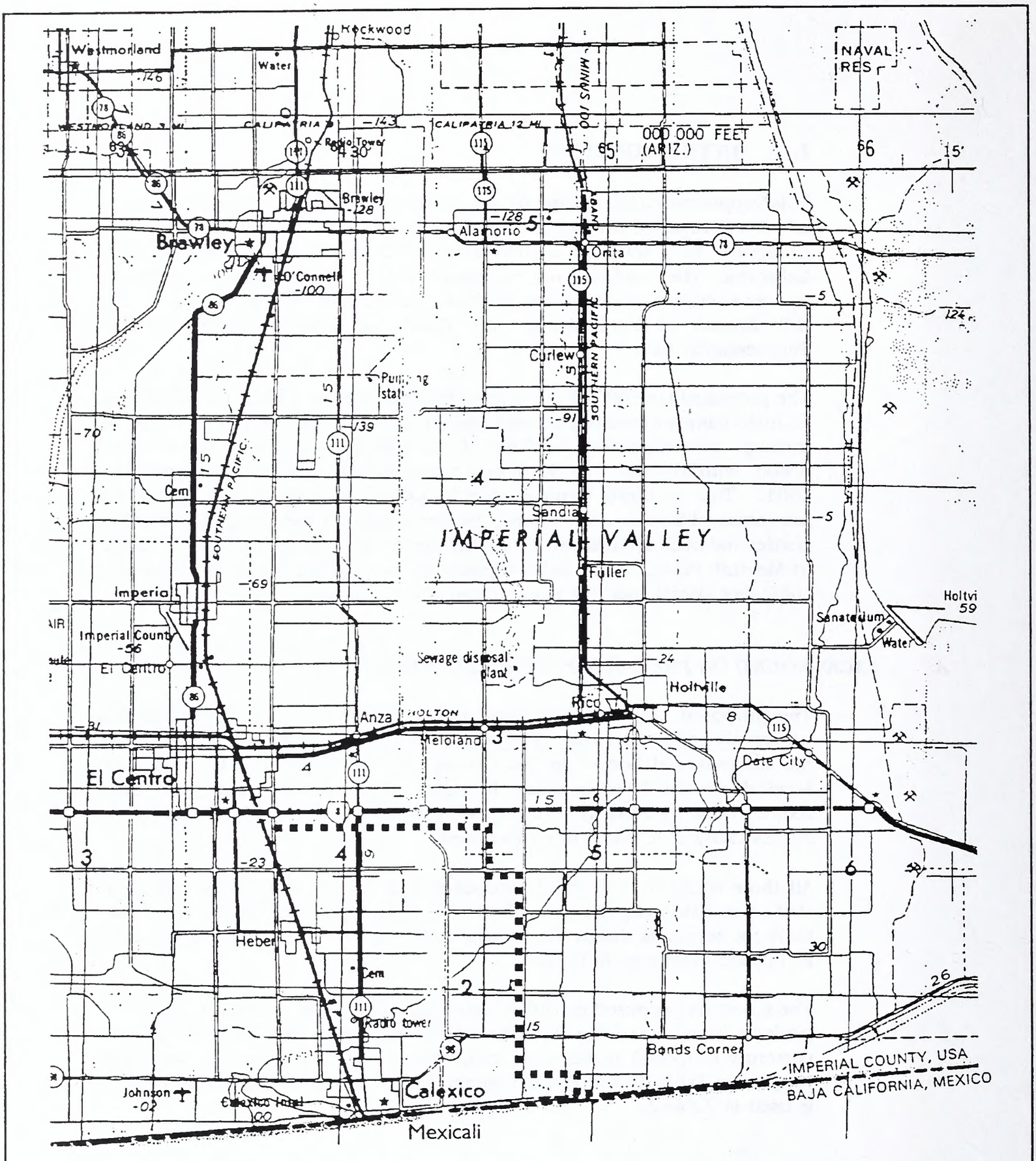
The proposed Line 6902 El Centro to Mexicali Project is a revision of two previously approved routes, designed to deliver natural gas to Mexico across the international border in the vicinity of Calexico on the U.S. side and Mexicali on the Mexican side. Revisions to the project route have been required due to a change in the Mexican customer and regulatory authority, necessitating different delivery locations.

All three routes (the currently proposed and the two previously approved) share a common alignment for the northern 10.0 miles of the pipeline route. Only the terminus differs among the three routes. Alignments of the three routes are illustrated in Figure 2.

The currently proposed project is also reduced from the previously approved projects in terms of the diameter of the pipeline. Specifications for the currently proposed project are compared to the two previously approved projects in Table 2. The Eastern Alternative for the project approved in 1993 is used in Table 2.

Line 6902 Environmental Assessment, 1993

This Supplemental EA evaluates the environmental effects of the proposed revision to the international border crossing at the southern terminus of the already permitted 77.6-mile long line 6902. Net mileage for the entire project would increase 1.5 miles (i.e., a 2.2-mile addition and a 0.7-mile reduction).



Source: USGS 1:250,000 scale Salton Sea and ElCentro map sheets

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Figure 1

■■■■■■ Pipeline Route

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Scale in milest

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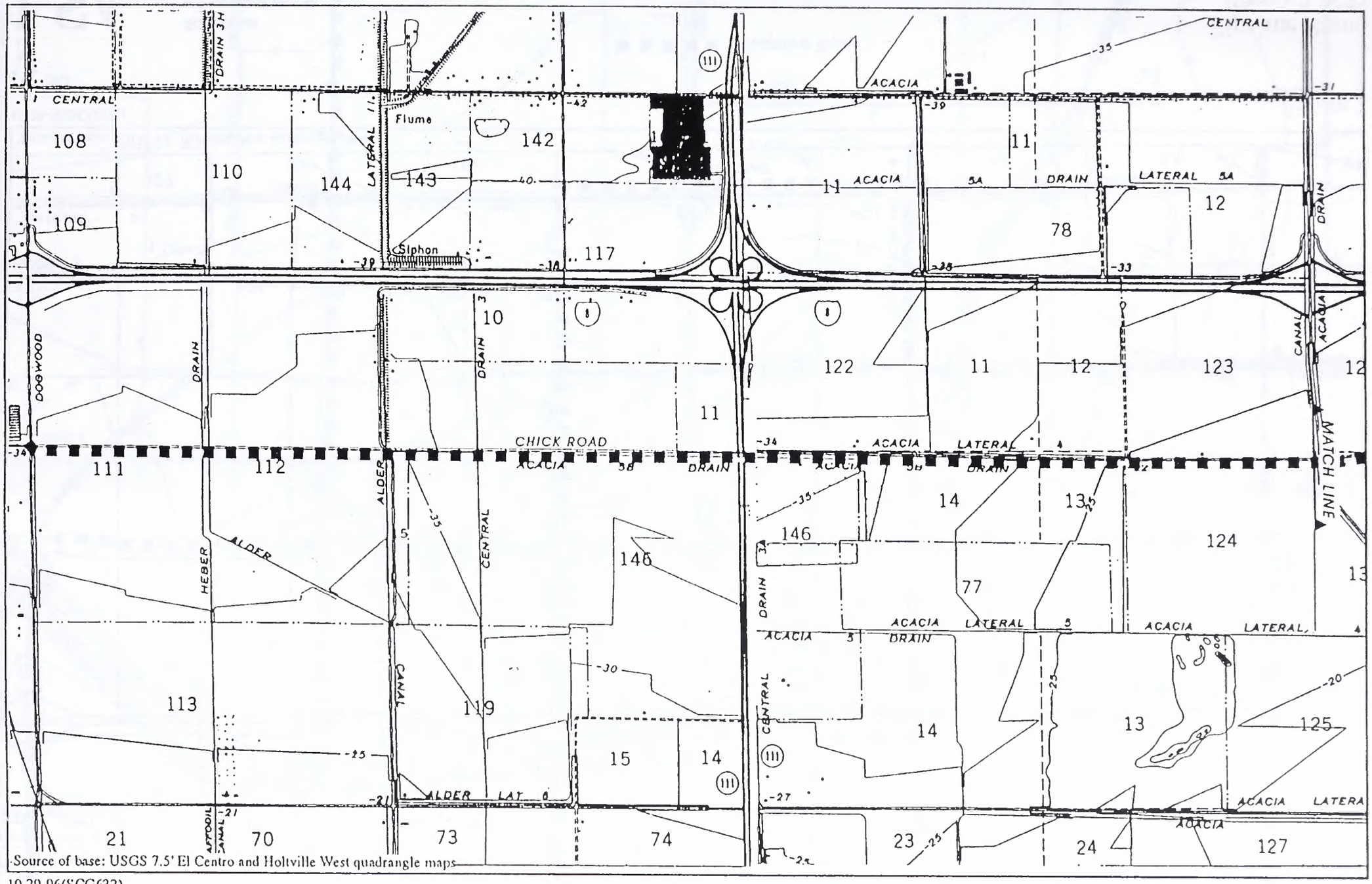
Regional Location



Source of base: USGS 7.5' El Centro and Holtville West quadrangle maps

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Figure 2

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LSA

Scale in feet

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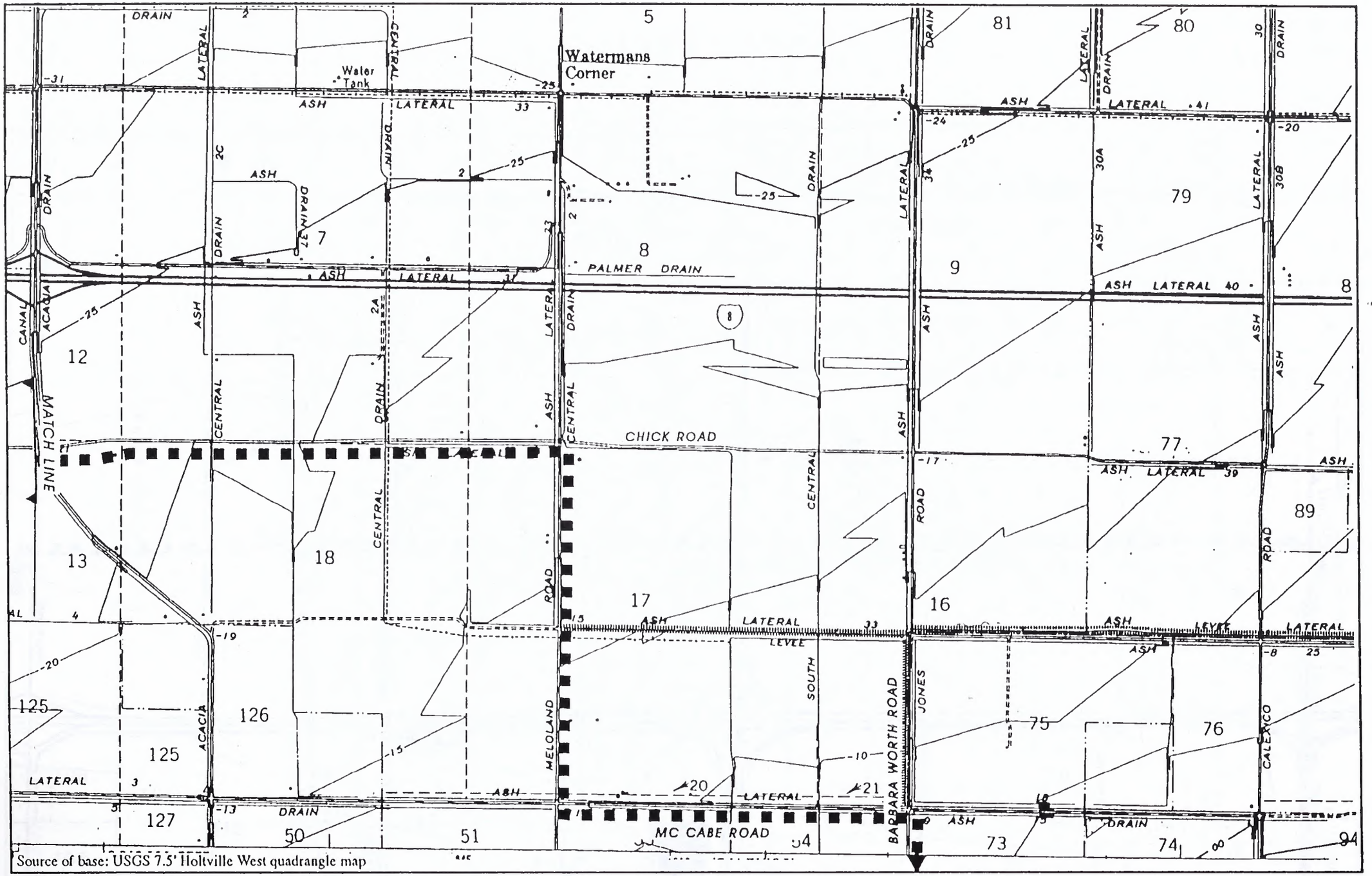
■ ■ ■ ■ ■ Proposed Route

Pipeline Route
(Sheet 1 of 3)



Source of base: USGS 7.5' Holtville West quadrangle map

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Figure 2

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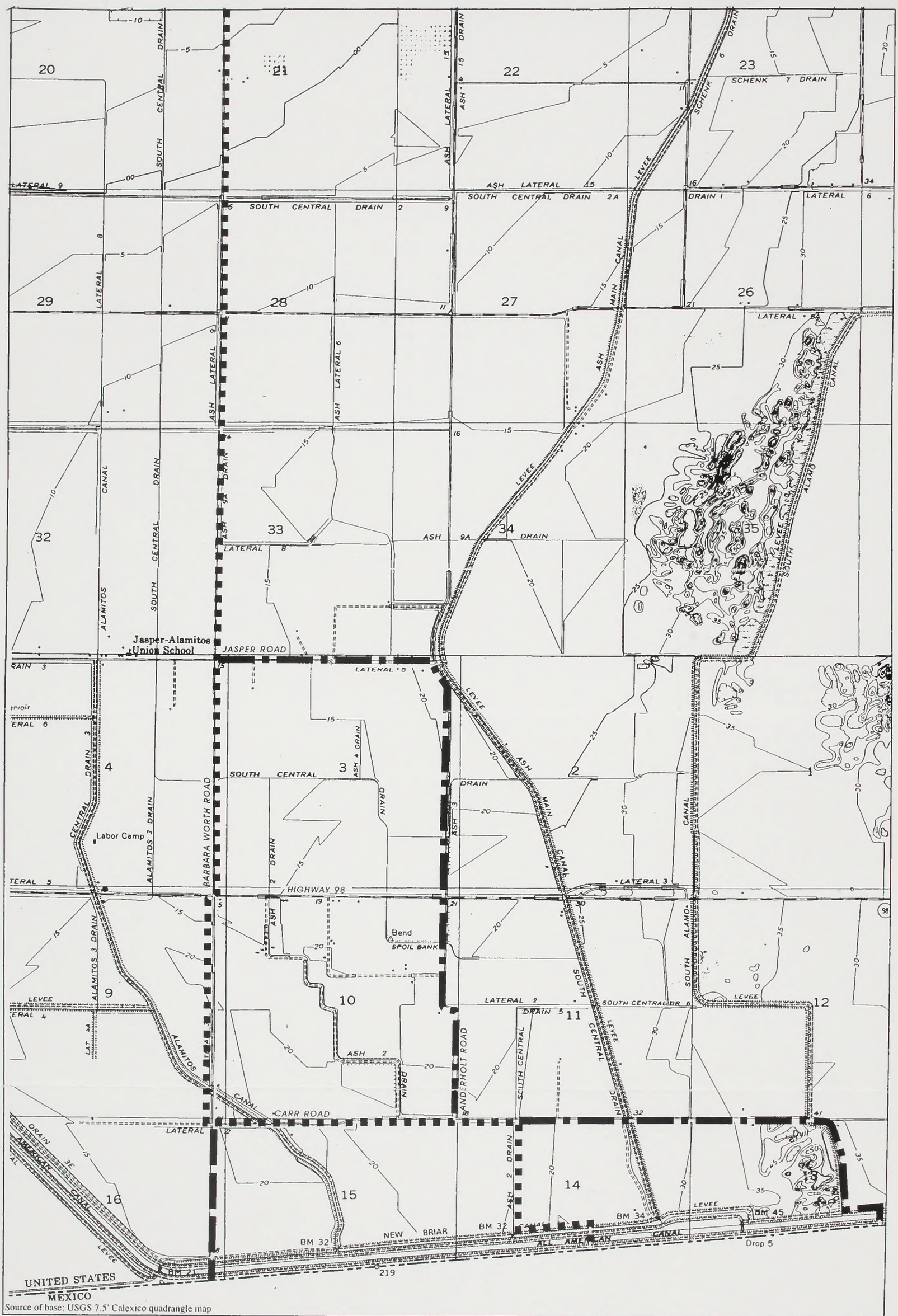
Scale in feet

0 2000

■ ■ ■ ■ ■ Proposed Route

Pipeline Route
(Sheet 2 of 3)



Source of base: USGS 7.5' Calexico quadrangle map

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LSA

Scale in feet

0 2000

Proposed Route

1993 Route

1994 Route

Figure 2

Pipeline Route
(Sheet 3 of 3)

Table 2 - Comparison Between Proposed and Previously Approved Projects
SoCalGas Line 6902 El Centro to Mexicali Project
Imperial County, California

Factor	Previously Approved 1993	Previously Approved 1994	Proposed 1996
Border Crossing Location	Barbara Worth Road	3.0 miles east of Barbara Worth Road at the International Port of Entry	1.7 miles east of Barbara Worth Road
Length	12.9 miles	15.5 miles	14.4 miles
Pipe diameter	16 inches for lateral/ 24 inches for main[1]	16 inches	12 inches for main/ 16 inches for directional bore
Trench width	28 inches for lateral/ 36 inches for main	28 inches	24 inches wide
Working strip width	75 feet	50 feet	50 feet
Area affected	117 acres	94 acres	87 acres
Sensitive receptors	11 residences 1 restaurant 1 feed lot 1 light industrial	16 residences 0 restaurant 2 feed lots 1 light industrial 1 International Port of Entry	14 residences 1 restaurant 1 feed lot 1 light industrial
Work crew	50	25-50	25-50
Hydrostatic test water	1,900,000 gallons	860,000 gallons	470,000 gallons
Major canal crossings	Bore under All American Canal	Bore under All American Canal	Bore under All American Canal
Secondary canal crossings	Trench through Alamitos and New Briar canals	Span over Ash Main and South Alamo canals	Bore under Alamitos (2 crossings) and New Briar canals

[1] 16-inch lateral from Chick and Dogwood roads east on Chick Road to Bowker Road for 3.6 miles. 24-inch main east of Chick and Bowker roads to the international border for 9.3 miles.

The original EA for line 6902 was issued in September 1993. The Bureau of Land Management (BLM), California Desert District in Riverside, California, was the lead NEPA agency for the original EA. The U.S. Marine Corps in Yuma, Arizona, and the U.S. Department of the Navy in San Diego, California, were the cooperating agencies. The Decision Record (CA-30646) was issued on February 3, 1994.

Environmental Assessment: Southern California Gas Company Natural Gas Transmission Line 6902 Project, Riverside and Imperial Counties (LSA 1993) provides the necessary NEPA review of all the proposed upstream facilities. The EA for the original line 6902 is included by reference with this Supplemental EA for the revised route terminus and border crossing facilities.

As described in the approved EA (LSA 1993), line 6902 would extend from Interstate 10 (I-10) in Riverside County, south through the Chocolate Mountains, past Niland, and terminate in the vicinity of Calexico, Imperial County. The already permitted route for the southern part of the pipeline is along Barbara Worth Road (Eastern Alternative).

The Gas Company has built the northern 31 miles of the line 6902 project from Interstate 10 in Riverside County to Niland in Imperial County. The southern portion of the line 6902 project has not been built to date. The Gas Company reserves the right to complete the southern portion of the original line 6902 project and to tie it into the currently proposed Line 6902 El Centro to Mexicali Project at the intersection of Chick and Bowker roads.

Modified Environmental Assessment, 1994

In 1994, the Gas Company revised the original line 6902 project route to accommodate a new border crossing location at the request of their Mexican customer. A *Modified Environmental Assessment (No. CA-060-05-1)* was prepared for the BLM as the lead NEPA agency and approved (LSA, December 15, 1994).

As part of the environmental review process, the BLM consulted with the U.S. Fish and Wildlife Service (USFWS) for Section 7 clearance under the federal Endangered Species Act and Section 106 clearance from the State Historic Preservation Officer (SHPO). The USFWS issued a "no effect" concurrence letter. After lengthy interactions between the BLM and SHPO, the two agencies reached a "no effect" concurrence agreement, documented in a memorandum by the BLM's District Archaeologist, Rolla Queen.

On September 1, 1994, the FERC gave formal Natural Gas Act Section 3 authorization and issued a Presidential Permit to the Gas Company to construct and operate the original border crossing facilities. This was published in the *Federal Energy Guidelines* (Docket No. CP94-207-000).

B. REGULATORY CONTEXT

This Supplemental EA has been prepared for the BLM in compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality's Regulations for Implementing the Procedural Provisions of NEPA, and the BLM Handbook for NEPA (BLM 1988).

Federal Energy Regulatory Commission Authorization

The Gas Company is seeking authorization under Section 3 of the Natural Gas Act from the Federal Energy Regulatory Commission (FERC) for the revised international border crossing project.

California Public Utilities Commission

The Gas Company is a California public utility subject to the jurisdiction of the California Public Utilities Commission (CPUC). Upstream facilities are subject to the jurisdiction of the CPUC.

California Environmental Quality Act

California Environmental Quality Act (CEQA) is the state equivalent of NEPA. This project will not require any discretionary permits from state or local jurisdictions. Accordingly, it does not require review under CEQA. It should be noted that, in most respects, CEQA environmental review requirements are similar to NEPA requirements.

C. PROJECT PURPOSE AND NEED

The proposed Line 6902 El Centro to Mexicali Project would connect the Gas Company's system with facilities to be built in Mexico. The facilities on the Mexican side of the border would be built by a Mexican company. The pipeline would serve natural gas requirements in the Mexicali area of Mexico. The proposed project would interconnect with facilities currently providing local distribution service of propane-air to mainly residential users in Mexicali. Natural gas is not presently provided to the Mexicali area, which uses propane from storage tanks. The proposed project would substitute piped natural gas for the propane in tanks, as well as provide for future natural gas needs in the area.

D. JURISDICTIONAL AND PERMIT-GRANTING AGENCIES

The resources potentially affected by the proposed project fall under the jurisdiction of the agencies and regulations described in Table 3. The project as proposed, incorporating the mitigation measures, is designed to be consistent with the applicable agency regulations.

Table 3 - Regulatory Context
SoCalGas Line 6902 El Centro to Mexicali Project
Imperial County, California

International Agencies	**Jurisdictional Responsibilities/Permit Requirements**
International Boundary and Water Commission (IBWC)	• Approval of siting facilities crossing the international boundary. Easement for border crossing.
Federal Agencies	**Jurisdictional Responsibilities/Permit Requirements**
U.S. Fish and Wildlife Service (USFWS)	• If threatened and/or endangered species are affected, Incidental Take Permit under Section 7 of the federal Endangered Species Act will be sought.
Federal Energy Regulatory Commission (FERC)	• Authority pursuant to Section 3 of the Natural Gas Act for the siting, construction, operation, and maintenance of border crossing facilities.
U.S. Immigration and Naturalization Service (INS)/Border Patrol	• Coordination with INS regarding construction along the international border, particularly crossing the patrol road used by INS.
U.S. Bureau of Reclamation	• Crossing easement for All American Canal (in coordination with the Imperial Irrigation District).
Office of the President	• Presidential Permit for the siting, construction, operation, and maintenance of border crossing facilities. Permit to be issued following the approval of the Department of State, the Department of Energy, and the Department of Defense.

State Agencies	Jurisdictional Responsibilities/Permit Requirements
California Public Utilities Commission (CPUC)	• CPUC approval is required for the rates and terms of service of the gas transportation through the proposed pipeline.
	• CPUC has authority over the safety practices and utility equipment that would be used in constructing the pipeline.
California Department of Fish and Game (CDFG)	• If threatened and/or endangered species are affected, Section 2081 management permit will be sought.
	• Section 1603 Streambed Alteration Agreement for stream crossings, if needed.
California Department of Transportation (Caltrans)	• Roadway encroachment permit for Highway 98 and 111 crossing.
State Historic Preservation Officer (SHPO)	• Coordinate through the BLM to fulfill the requirements of Section 106 of the National Historic Preservation Act.

Local/Regional Agencies and Organizations	Jurisdictional Responsibilities/Permit Requirements
Imperial County Public Works Department	• Roadway Encroachment Permits.
City of El Centro	• Roadway Encroachment Permits.
Imperial Irrigation District (IID)	• Crossing Permit for Ash Main Canal, All American Canal, South Alamo Canal, and numerous other smaller canals, laterals, and drains.

II. PROJECT DESCRIPTION

A. PROJECT LOCATION

The proposed Line 6902 El Centro to Mexicali Project would eliminate the last (i.e., southerly) 0.7 mile of the already permitted SoCalGas line 6902 route along Barbara Worth Road. The revised U.S.-Mexico international border crossing for the proposed pipeline would be moved to a location 1.7 miles to the east (Figure 2).

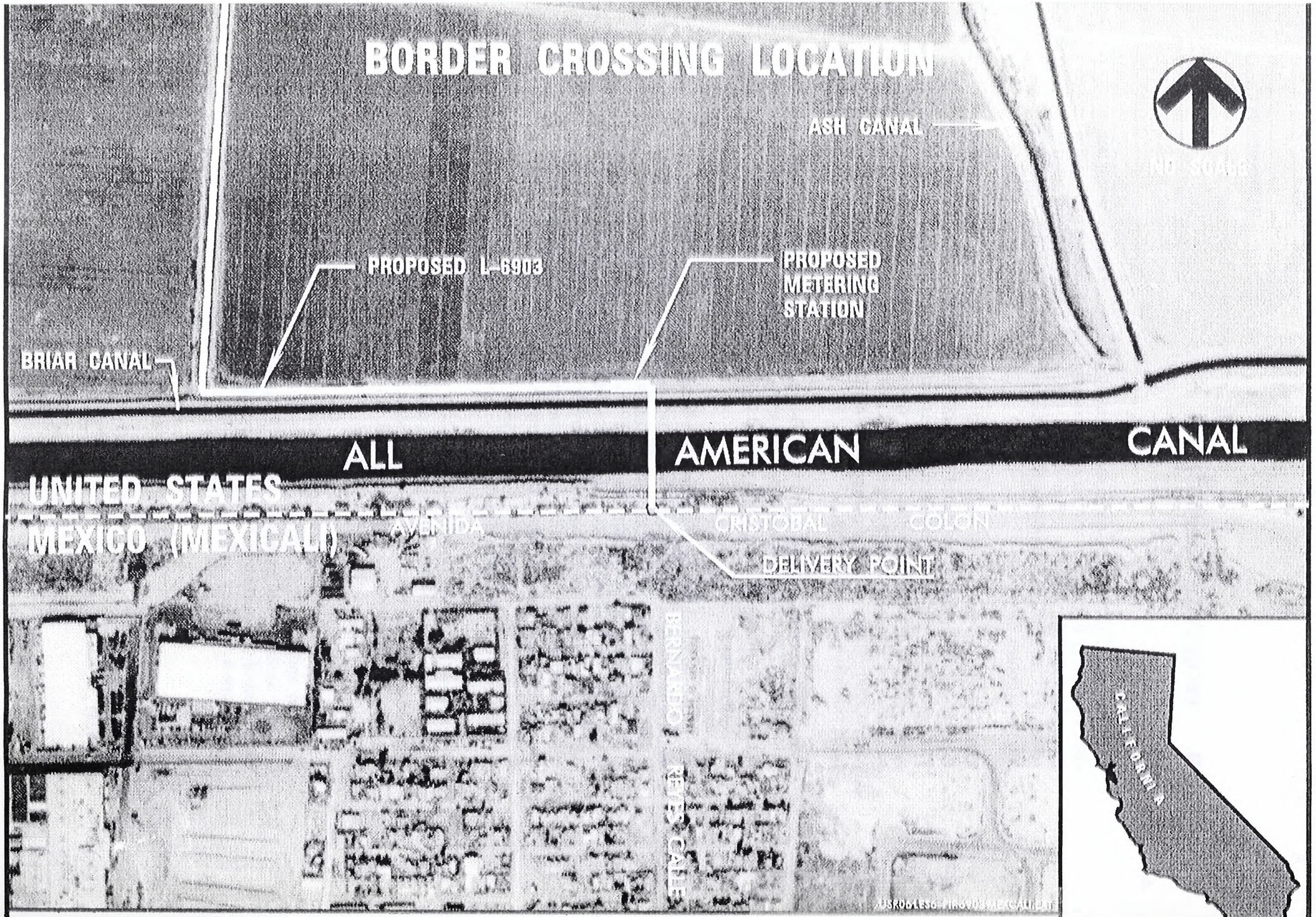
The tie-in for the proposed Line 6902 El Centro to Mexicali Project with existing SoCalGas line 6001 would be in the limits of the City of El Centro. The rest of the pipeline route, located east of Dogwood Road and on the south side of the Chick Road, is outside city limits. The city limits extend south to Chick (a.k.a. Dannenberger) Road and east along Chick Road to the Alder Canal (Figure 2). The name of Dannenberger Road changes to Chick Road outside of the city limits.

The proposed project would tie into the 10-inch-diameter SoCalGas line 6001. The line 6902 El Centro to Mexicali Project would originate at the northwest corner of the intersection of Dogwood and Dannenberger roads in the City of El Centro (Figure 2).

The proposed pipeline would traverse east for approximately 6 miles along the south side of Chick Road to Meloland Road, turn south for approximately 1 mile along the east side of Meloland Road to McCabe Road, turn east for approximately 1 mile along the south side of McCabe Road to Barbara Worth Road, turn south along the east side (along the west side for the last mile) Barbard Worth Road for approximately 5 miles, turn east along the south side of Carr Road for 1.3 miles, turn south along the east side of the Ash 2 Drain for 0.5 mile, and turn east along the access road on the north side of the All American and New Briar canals for 0.5 mile (Figure 2). The final 0.1 mile would be south to the international border for a total length of 14.4 miles.

The pipeline would be bored under the New Briar and All American canals. Figure 3 is an aerial photograph view of the border crossing location with the pipeline route indicated. The bore is designed to avoid any direct impact to the canals or their banks. The pipeline would then continue to the southern tie-in immediately south of the international border.

A metering station would be constructed immediately north of the All American and New Briar canals. Figure 4 is a schematic of the proposed metering station. The metering station is planned to be constructed on the canal right-of-way and north of the canal embankment (Figure 3). The station would have a footprint of 35 feet by 100 feet.



THE GAS COMPANY
E.D.S. – L.D.S., TECHNICAL SOLUTIONS
LAND ENGINEERING SERVICES
DRAWN BY: J. AGUILERA APPROVED BY: R.P. JOSENHANS, P.L.S. 5846

Figure 3
Border Crossing Location

PLAN

PRELIMINARY

DETAIL 3 30475-3003-D.MTR

SIGNAL AND CONTROL TO G.A.S. OPERATIONS

30475-3002-D.MTR

FLOW COMPUTER

12" Ø HEADER

INLET

OUTLET

CHAINLINK FENCE

GENERAL NOTES

1. WHERE MSA OR REG. STATIONS ARE EXPOSED TO VEHICULAR TRAFFIC, INSTALL REQ'D. GUARD POSTS PER DWG. C-12556 TO PREVENT DAMAGE.
2. DO NOT VENT GAS NEAR BUILDING OPENINGS, WALLS, WINDOWS, DOORS OR NEAR OVERHEAD POWER LINES.
3. INSTALL THERMOMETER WELL PER STANDARD DWG. CC-12635.
4. FOR MATERIAL SUBSTITUTION, DIMENSIONAL CHANGE OR DEVIATION FROM THE DESIGN DRAWING, CONTACT THE PROJECT DESIGNER
5. SUBMIT AS-BUILT INFORMATION IDENTIFYING EQUIPMENT CHANGES (ADDITIONS, DELETIONS, REVISIONS) AND DEVIATIONS IN PIPING LAYOUT (INCLUDING ALL DIMENSIONAL CHANGES) TO PROJECT DESIGNER FOR MODIFICATIONS OF DESIGN DRAWINGS TO REFLECT ACTUAL INSTALLATIONS.
6. INSTALL REGULATOR CONTROL PIPING IN ACCORDANCE WITH SYSTEM INSTRUCTION NUMBERS 180.0050 AND 184.0195.
7. DO NOT SCALE FROM THIS DRAWING.
8. APPLY PROTECTIVE COATING TO BURIED PIPE IN ACCORDANCE WITH SYSTEM INSTRUCTION NUMBER 186.0100.

LEGEND

1. DENOTES DIRECTION OF FLOW.
2. INSULATION KIT.
3. DENOTES TIE-IN.
4. L.C. = LOCK CLOSED
5. N.O. = NORMALLY OPEN
6. L.O. = LOCK OPEN
7. EXIST. MATERIAL ITEM BUBBLE

NOTE:

GAS CHROMATOGRAPH LOCATED AT G.E.M.S. SITE AT U.D. AT EL CENTRO.

			10-1-96	FOR REVIEW & COMMENT
NO.	PROJECT APPROVED	DR. ENG. APPROVED	JOB FILE NO.	DATE

	BY	DATE
DESIGNED	J.RAMNEY	8-13-96
DRAWN	M.QUEVAS	10-1-96
CHK'D.		
APPR'D.		
LEAD FILE NO.		
G.M.S.		
DIST.		
DATE		

Southern California Gas Company
ENGINEERING & FIELD SUPPORT — LOS ANGELES

METER & REG SET DESIGN
MEXICALI
PIPING PLOT PLAN

The Gas Company

3/16"=1'-0"

30475-3001-D.MTR A

Figure 4
Metering Station

B. NO-ACTION ALTERNATIVE

Under the no-action alternative, the Gas Company would not reroute the southern terminus of line 6902. The Gas Company transmission pipeline would terminate at the end of Barbara Worth Road with a metering station. The pipeline would not cross the U.S.-Mexico international border at the designated location. Under such circumstances, it is likely that Mexico would not accept natural gas delivered by the Gas Company.

Demands for energy in Mexico could be met by alternative fuels, primarily oil and other petroleum products with potentially greater air pollutant emissions than natural gas. Additional electrical generating capacity also may be necessary in Mexico to meet existing peak and future demands.

C. LAND REQUIREMENTS

Before construction, individual parcels of land required for construction would be identified. Easements and permits would be secured from property owners and managing agencies. Required easements, permits, and regulatory approvals are summarized in Table 3.

The proposed pipeline would be installed in new easements to be obtained from property owners. The Gas Company has rights-of-way for roads under its franchise agreements with Imperial County and the City of El Centro. The Imperial Irrigation District (IID) and U.S. Bureau of Reclamation would grant canal crossing easements. The metering station would be located entirely in an IID canal easement. Installation of the pipeline across and within these easements would not require any discretionary actions by the county or the city.

The federal Border Patrol would be notified of all construction activities east of Barbara Worth Road and coordination arrangements would be made (R. Wilkinson pers. comm.). The International Boundary and Waters Commission (IBWC) would grant an easement for the strip of land immediately adjacent (north) to the Border Patrol's jurisdiction. The IBWC would also approve pipeline construction in the border area after a determination has been made that the proposed project would not change international boundary markers.

D. PIPELINE CONSTRUCTION

The Line 6902 El Centro to Mexicali Project would comply with regulations for pipeline construction and operation (e.g., CPUC General Order 112-E, Cal Occupational Safety and Health Administration (OSHA), and Federal OSHA).

Labor

Approximately 25 people constitute a construction crew or "spread." A minimum pipeline inspection force from the Gas Company of four people would also be required at each spread throughout pipeline construction. One spread would be employed during most of the construction period. Another spread would be used to bore under the All American Canal at the same time that the first spread would be working on pipeline construction up-stream. The boring operation would take less time than the pipeline construction. If the construction schedule became constrained, a second spread would also be employed on pipeline construction. The maximum anticipated work force would be 58 people, including inspectors, with 29 being the more likely number for most of the construction period.

The pipeline construction contractor is expected to recruit at least half of the necessary labor from the southern California area. The remainder of the labor force would come from across the country. Construction personnel would commute to the work site daily from interim residences in the Imperial Valley area. Gas Company employees would come from the existing bases within the service territory in southern California.

Construction Schedule

Construction would be scheduled to begin in February or March of 1997 and take three months to complete. Construction activities would generally be from Monday through Friday. Typically, construction work would not take place outside daylight hours. Weekend work may occur as needed.

Staging Area

Pipeline construction would require the establishment of a staging area for storage of construction materials. The staging area would be an unused portion of an industrial facility or similar leased area in the vicinity of El Centro. A natural or otherwise undisturbed area would not be used for staging.

Pipe would be transported to the construction site by truck from a railhead station. Other materials required for construction, such as valves, fittings, and support equipment would be supplied to the contractors from a supply point designated by the Gas Company.

Construction Equipment

Construction equipment would consist of the following machinery:

Construction Stage	Equipment
Clearing and grading	Bulldozer
Hauling and stringing	Truck, tractor
Trenching	Trencher/track-hoe
Bending pipe	Bender
Pipe laying	Tractor, welder, grinder
Lowering	Side boom, crane
Finishing	Bulldozer, grader
Worker shuttles	Pick-up truck, van
Dust control	Water truck

Construction Methods

The pipe used would be 12.750-inch outside diameter (12.312 inches inside diameter) grade X-42 low alloy steel. The thickness of the pipe would conform with CPUC General Order Number 112-E. Overland installation of the 12-inch-diameter pipe would require a trench approximately 24 inches wide, allowing six inches of clearance on each side of the pipe. Approximately three feet of clearance is needed on each side where the pipeline makes major directional changes.

Working Strip

The construction easement is referred to as the working strip. Existing roads and disturbed areas would be a part of the working strip. The maximum, basic working strip width would be 50 feet to accommodate the various construction operations and heavy equipment required to construct the pipeline. In most instances, the actual construction corridor would be narrower.

The pipeline would be installed in a trench that would be offset 5 feet from the side of the road pavement, where it parallels paved roads. Spoils would be placed immediately adjacent to the trench. The existing paved road would be used to convey construction equipment. During construction times, part of the road would be flagged off from traffic to allow construction activities.

Although the pipeline is proposed for construction in the roadway shoulder, some pavement disruption would likely occur. The Gas Company would repave any pavement disturbed in project construction.

State Highway Crossings

Caltrans requires that their highways be bored under. Highways 98 and 111 would be bored, rather than trenched. A conventional, horizontal, track-mounted, auger boring construction technique would be used. Pits would be excavated on either side of the highways, and the bore carrier pipe (without casing) would then be pushed under the highways.

Canal Crossings

The Gas Company would develop a plan for canal crossings with the IID. The crossing procedure for major and secondary canals, such as the All American, New Briar, and Alamitos, would be to bore under the waterways. Construction procedures are designed to avoid direct impacts to the canals or their embankments.

The preferred procedure would be to avoid the minor drainage ditches and canal laterals by placing the pipeline in the shoulders of roads. Drainage ditches and canal laterals usually cross roads through a culvert. The proposed pipeline would trench over the culvert, where clearance is sufficient. If sufficient clearance were not present, the gas pipeline would be pushed under the culvert. If avoidance of minor irrigation facilities were not possible, minor drainage ditches may be trenched through. However, canal laterals would not be trenched.

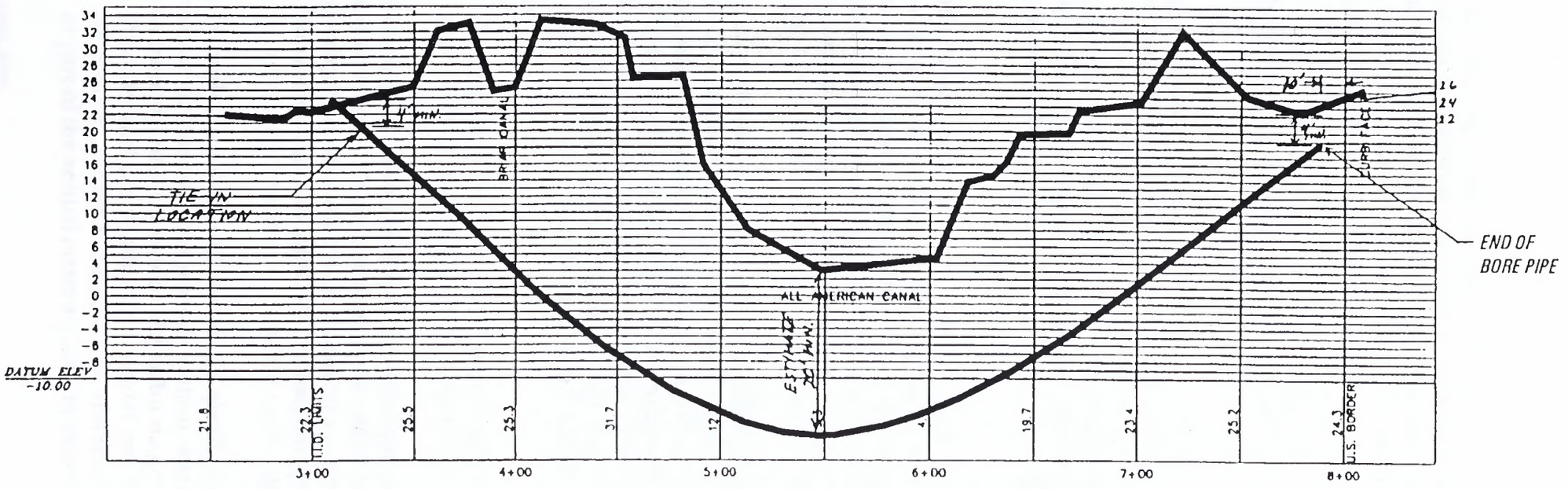
Horizontal Bore

As with the state highways, a conventional, horizontal, track-mounted, auger boring construction technique would be used to cross under the secondary canals.

Directional Bore

A directional bore technique would be used to cross under the New Briar and All American canals. Boring would allow the pipeline to be buried under the canals at depths much greater than those of conventional crossings. With this technique, a hole in the form of an inverted arc would be drilled beneath the canal, and the actual made-up pipeline would be pulled through it. A schematic of the bore profile for the canal crossings is provided in Figure 5.

Pilot Hole. Before beginning the crossing, drilling equipment, auxiliary machinery, and support structures would be set up at one side of the crossing. The drilling rig would be mounted on a trailer to facilitate transport and access to the crossing location. Mud pumps and holding tanks would be placed alongside the drilling rig.



Note:
Bottom of All American Canal is approximate and is based on drawings approved by the Imperial Irrigation District.

Source: Hall and Foreman, Inc.

11-20-96(SCG632)

Figure 5

N

LSA

Horizontal Scale: 1" = 50'
Vertical Scale: 1" = 12.5'

All American Canal Directional Bore Profile

In the initial step of the process, a pilot hole is drilled from one side to the other of the crossing. This pilot hole is drilled by a small rotating bit (2-6 inches in diameter) powered by a hydraulic motor. As this drill assembly moves forward, joints of small-diameter pipe, making up what is called the pilot string, are joined behind it. The main function of the pilot string is to establish a pathway for the pipeline. A computerized guidance system is used to maintain the correct course for the pilot string and for the carrier pipe later on.

Pre-ream. The next step would be the pre-ream. A slightly larger diameter wash pipe is attached to the pilot string. By reversing the direction of rotation on the pilot string, the rig can pull the wash pipe back under the crossing. A reamer is attached between the drill pipe and the wash pipe. As the assemblage is pulled through, joints of wash pipe are added on the pipe side of the crossing. At the same time, the pilot string is disassembled on the rig side.

Pull-back. The wash pipe remains in place until the actual pipeline is installed. The final step in the process would be the pull-back. The actual product pipeline is attached to the wash pipe. A reamer and swivel is used between the drill pipe and the product pipeline. This assemblage is pulled back under the crossing, as the wash pipe is disassembled and the actual pipeline assembled.

Drilling Slurry. During drilling, mud in the form of drilling slurry is pumped into the hole both to lubricate the drill bit and to draw off the cuttings or spoil. The slurry is pumped down the hole. The slurry is then circulated back to the surface and collected in tanks. This slurry is recycled. Slurry that has been circulated down the hole and collected in tanks is passed through machinery, which separates the cuttings from the slurry. The slurry would be disposed off-site at a dump site in compliance with local, state, and federal laws.

Pressure Testing

After construction is completed, the pipeline would be hydrostatically tested by filling the line with water and pressurizing the pipe to a predetermined minimum of 929 and a maximum of 1,482 pounds per square inch (psi) to verify its integrity. Approximately 470,00 gallons of water would be required for hydrostatic testing.

Test water would most likely be drawn from a local irrigation canal. After completion of hydrostatic testing, the test water would be evacuated from the pipe segment by forcing an inflatable rubber cylinder (known as a pig) down

the line with natural gas. The test water would either be discharged by spreading and percolation/evaporation in accordance with appropriate local, state, and federal regulations or returned to an irrigation canal for reuse. For spreading, the rate of discharge of the test water would be controlled to prevent erosion of local terrain.

E. OPERATION AND MAINTENANCE

Operation and maintenance procedures incorporate the requirements of appropriate federal, state, and local codes, regulations, and ordinances. Included are U.S. Department of Transportation regulations contained in 49 CFR, Part 192, the California Occupational Safety and Health Act, and CPUC General Order 112-E. Maintenance activities include inspection, monitoring, and repair of cathodic protection equipment and valves along with regular patrols on the pipeline.

Cathodic Protection

Testing the cathodic protection involves driving along the pipeline and monitoring the status of the equipment. Meters would be read on a quarterly basis to check the voltage on the cathodic protection and to adjust if needed. All ETS (electric test stations) would be read annually.

One new rectifier would be installed to replace an older existing rectifier on the corner of Chick and Dogwood roads. The replacement rectifier would be installed approximately one mile north of the corner of Chick and Dogwood roads on City of El Centro franchise property along Dogwood Road. The rectifier would require routine maintenance.

Facility Inspections

The proposed pipeline would be serviced along existing city, county, and IID levee roads. There would be no overland vehicular travel.

The metering station would be visited semi-annually at a minimum to inspect and test the automatic line break controls. Valves would be greased and manually operated not less than once a year. Inspection of the pipeline would be accomplished by semi-annual vehicle surveys. The line would be surveyed with leakage detection equipment every year.

Blowdowns

"Blowdowns" are ventings of natural gas either during routine maintenance procedures, pipeline construction and relocation, or for emergency purposes. As part of the annual metering station inspection and maintenance procedures,

natural gas is vented from a pipe at the metering station, for approximately one minute. This relief of pressure allows the Gas Company to conduct necessary inspection and maintenance. The gas is vented from stacks eight to ten feet high.

Prior to non-emergency venting, the Gas Company would notify all local authorities, airports, and fire departments. The notification include information as to when and where venting would occur and would inform them of the typical noise and odors associated with the procedure.

III. ENVIRONMENTAL SETTING

A. LAND USE

Sensitive Receptors

Agriculture is the primary nearby land use. Fourteen rural residences, a small restaurant, a feed lot, and a tractor parts outlet are in the vicinity of the pipeline route. The rural residences, restaurant, feed lot, and light industrial facility that border the proposed alignment would all be over 40 feet from the location of the proposed pipeline (R. Wilkinson pers. comm.).

Land Ownership

The Gas Company would acquire easements to install and operate the proposed pipeline and ancillary facilities on private and public land. The pipeline would be buried and would require only subsurface easements. The metering station is above the ground and would require surface and subsurface easements. The construction and operation of the proposed facilities would not affect mineral rights on the subject properties, so the Gas Company would not acquire agreements on mineral rights.

Approximately 13.6 miles of the proposed alignment are on the City of El Centro and Imperial County franchise properties, for which the Gas Company has existing agreements to subsurface rights for utility installation and operation. No surface rights would be acquired on these franchise properties, because no above ground facilities would be installed along those portions of the proposed alignment.

Approximately 0.5 mile of the proposed alignment is on privately owned land. The Gas Company has identified the private owners and would negotiate easements for subsurface rights to install and operate the underground pipeline on their properties.

The proposed pipeline would cross approximately 300 feet of state land administered by Caltrans at the crossings of highways 98 and 111. Subsurface encroachment permits only would be acquired for these crossings.

The IID and U.S. Bureau of Reclamation would grant canal crossing easements. The proposed pipeline would parallel the All American Canal for 0.3 mile. The above the ground metering station would also be installed along that alignment. This section of the alignment is owned by the federal government and is under the jurisdiction of IID. The Gas Company will acquire surface and subsurface right-of-way agreements with the approval of IID for construction and operation on that property.

B. SOCIOECONOMIC CONSIDERATIONS

The following discussion describes the various socioeconomic indicators for the Imperial Valley area.

Population. From 1980 to 1990, the population of Imperial County increased 30 percent (California Almanac 1991). Imperial Valley comprises approximately 82 percent of the total county population. Countywide growth trends can be expected to be representative of growth trends in the Imperial Valley, and the total population of the Imperial Valley can be predicted to be approximately 117,000 in the year 2000. The annual population growth rate for the Imperial Valley was 2.8% for the period 1980-1990.

Employment and Income. The Imperial Valley had a total civilian labor force of 35,000 in 1990, an unemployment rate of 13.4 percent (approximately 6.6 percent lower than the county average), and a median household income of $24,015.

Hotels and Motels. The American Automobile Association (AAA) lists approximately 475 rooms in El Centro at an average rate of $31 per night. This analysis assumes 2.5 times as many accommodations available for construction crews than listed by (AAA). The vacancy rate for hotels and motels varies from approximately ten percent in summer to three percent in winter. Because construction is scheduled to take place in the spring, a vacancy rate of five percent is assumed, which equates to approximately 59 available rooms.

Housing Units. The Imperial Valley had approximately 31,300 total housing units in 1990, comprising approximately 85 percent of the total housing units in Imperial County. Average occupancy was 2.84 persons per unit. Approximately 88 percent were occupied. Of the vacant units, approximately 700 were available for rent.

C. VISUAL RESOURCES

The visual character of the pipeline route is dominated by agricultural fields in various phases of cultivation. There are a total of 14 rural residences and 3 small businesses with views of the pipeline construction corridor.

D. TRAFFIC

Regional access to the project area is provided by Interstate 8 (I-8) and State Highways 111, 78, and 98. Barbara Worth Road runs perpendicular to I-8 and State Highway 98. Meloland Road runs parellel to K-8 and State Highway 98. McCabe Road runs perpendicular to I-8 and State Highway 98. Carr Road bisects Barbara Worth Road roughly 1.5 miles south of State Highway 98. The

Line 6902 El Centro to Mexicali Project would require a construction right-of-way for paralleling the county roads.

E. VEGETATION AND WILDLIFE

Methods

Existing published and unpublished literature sources were researched. Locally knowledgeable persons and biologists from the BLM, USFWS, and CDFG were consulted. A search was made of the California Natural Diversity Data Base (CNDDB 1996) for records of occurrences in the general vicinity of the project area. Lists of potentially occurring special status species supplied by the USFWS for two other proposed projects in the general vicinity were reviewed (ESA 1993, LSA 1993). Based upon this input, a list of potentially occurring special status species was compiled. Table 4 includes information on scientific names, habitat, and season of occurrence (animals) or bloom (plants) potentially occurring in the project vicinity. Reconnaissance level biological surveys were conducted throughout 1994 and on October 23, 1996.

Results

No natural habitat types are present along the project route. Human-created/influenced habitat types included agricultural land, irrigation facilities, and urban. Vegetation, other than agricultural crops, along the proposed working strip consisted mainly of ruderal (weedy), herbaceous species. No wetlands were detected along the working strip. Potential wetlands are present off the project site.

None of the federal and/or state listed threatened and endangered species identified as potentially present in the general project vicinity (i.e., within 25 miles; see Table 4) were detected on the field surveys, nor were any likely present given the lack of suitable habitat.

Burrowing owls (*Speotyto cunicularia*), a California species of special concern, were detected at various locations along the route. Burrows, potentially usable by burrowing owls, were abundant along agricultural irrigation berms and levees. The burrowing owl is a potential nesting species on or adjacent to the pipeline corridor.

Within three miles of the proposed pipeline alignment, but not within the proposed working strip area, another California species of special concern, the loggerhead shrike (*Lanius ludovicianus*) was observed. Use of habitat on the project site by the shrike would be incidental. Suitable nesting habitat for the shrike, which uses trees or shrubs for nesting, was absent along or adjacent to the pipeline corridor.

Table 4 - Potentially Occurring Special-Status Species
SoCalGas Line 6902 El Centro to Mexicali Project
Imperial County, California

	ENGLISH NAME	SCIENTIFIC NAME	STATUS
Plants			
	Pierson's Milk-vetch	*Astragalus magdalanae* var. *piersonii*	FPE, CE, CNPS1b
	Foxtail Cactus	*Coryphantha (Escobaria) vivipara* var. *alversonii*	FSC, CNPS1b
	Winged Cryptantha	*Cryptantha holoptera*	CNPS4
	California Ditaxis	*Ditaxis californica*	FSC, CNPS1b
	Algodunes Dunes Sunflower	*Helianthus niveus tephrodes*	FSC, CE, CNPS1b
	Spearleaf	*Matela parvifolia*	FSC, CNPS2
	Munz's Cholla	*Opuntia munzii*	FSC, CNPS1b
	Wiggin's Cholla	*Opuntia wigginsii*	FSC, CNPS3
	Giant Spanish Needle	*Palafoxia arida* var. *gigantia*	FSC, CNPS1b
	Orocopia Sage	*Salvia greatae*	FSC, CNPS1b
	Orcutt's Woody-Aster	*Xylorhiza orcuttii*	FSC, CNPS1b
Amphibians			
	Yavapi (Lowland) Leopard Frog	*Rana yavapaiensis*	FSC
	Couch's Spadefoot Toad	*Scaphiopus couchii*	CSC
	Colorado River Toad	*Bufo alvarinus*	CSC
Reptiles			
	Flat-tailed Horned Lizard	*Phrynosoma mcallii*	FPT, CSC
	Co. Desert Fr.-toed Lizard	*Uma notata notata*	FSC, CSC
Birds			
	Western Least Bittern	*Ixobrychus exilis hesperis* (nesting)	FSC, CSC
	White-faced Ibis	*Plegadis chihi*	FSC, CSC
	Wood Stork	*Mycteria americana*	CSC
	Fulvous Whistling Duck	*Dendrocygna bicolor* (breeding)	FSC, CSC
	Ferruginous Hawk	*Buteo regalis* (wintering)	FSC, CSC
	Golden Eagle	*Aquila chrysaetos* (breeding and winter)	CSC, CFP
	Prairie Falcon (nesting)	*Falco mexicanus*	CSC
	California Black Rail	*Laterallus jamaicensis coturniculus*	CT, FSC CFP
	Yuma Clapper Rail	*Rallus longirostris yumanensis*	FE, CT, CFP
	Western Snowy Plover	*Charadrius alexandrinus nivosus* (breeding/interior population)	CSC
	Mountain Plover	*Charadrius montanus*	FSC, CSC
	Long-billed Curlew	*Numenius americanus*	CSC
	Burrowing owl	*Speotyto (= Athene) cunicularia*	CSC
	Gila Woodpecker	*Melanerpes uropygialis*	CE
	Vermilion Flycatcher	*Pyrocephalus rubrinus*	CSC

ENGLISH NAME	SCIENTIFIC NAME	STATUS
Crissal Thrasher	*Toxostoma crissale*	CSC
LeConte's Thrasher	*Toxostoma lecontei*	CSC
Loggerhead Shrike	*Lanius ludovicianus*	CSC
Sonoran Yellow Warbler	*Dendroica petechia sonorana* (nesting)	CSC
Yellow-breasted Chat	*Icteria virens* (nesting)	CSC
Mammals		
Spotted Bat	*Euderona maculatum*	CSC, FSC
California Leaf-nosed Bat	*Macrotus californicus*	CSC, FSC
Occult Little Brown Bat	*Myotis lucifugus occultus*	CSC, FSC
Pocketed Free-tailed Bat	*Nyctinomops (= Tadarida) femorosaccus*	CSC
Pale Big-eared Bat	*Plecotus townsendii pallescens*	CSC
Yuma Cotton Rat	*Sigmodon hispidus eremicus*	CSC, FSC

Sources: CNDDB (1993), ESA (1993), LSA (1993).

Status:

FE	Federally endangered
FPE	Federally proposed endangered
FPT	Federally proposed threatened
FT	Federally threatened.
FC	Federal candidate, indicating species for which information supports a proposal to list.
FSC	Federal species of concern, indicating species for which conclusive data on biological vulnerability and threat are not currently available.
CE	California endangered.
CT	California threatened.
CSC	California species of special concern.
CFP	California fully protected.
CNPS1b	Plants rare, threatened, or endangered in California and elsewhere according to the California Native Plant Society.
CNPS2	Plants rare, threatened or endangered in California, but more common elsewhere.
CNPS3	Plants about which more information is needed; a review list.
CNPS4	Plants of limited distribution; a watch list.

California species of special concern are not included under the protection of either the state or federal Endangered Species Acts. None of the other plant and animal species were detected and all are presumed absent due to lack of suitable habitat.

F. GEOLOGY, SOILS, AND SEISMICITY

The elevation at the proposed pipeline alignment ranges from 15 to 30 feet above mean sea level (msl); the route is generally level. Geologic units through which the proposed right-of-way would traverse are recent (10,000 years old or less) alluvium, lake, clay and/or terrace deposits.

Soils

The soil complexes found in the project area are those dominant in the lacustrine basin formerly occupied by the old Lake Cahuilla. The soils are nearly level and deep. They exhibit slow permeability and surface runoff. The potential for erosion is slight. The potential hazards from seasonal expansion and contraction of soils is high. Soils are highly corrosive to uncoated steel and moderately corrosive to concrete.

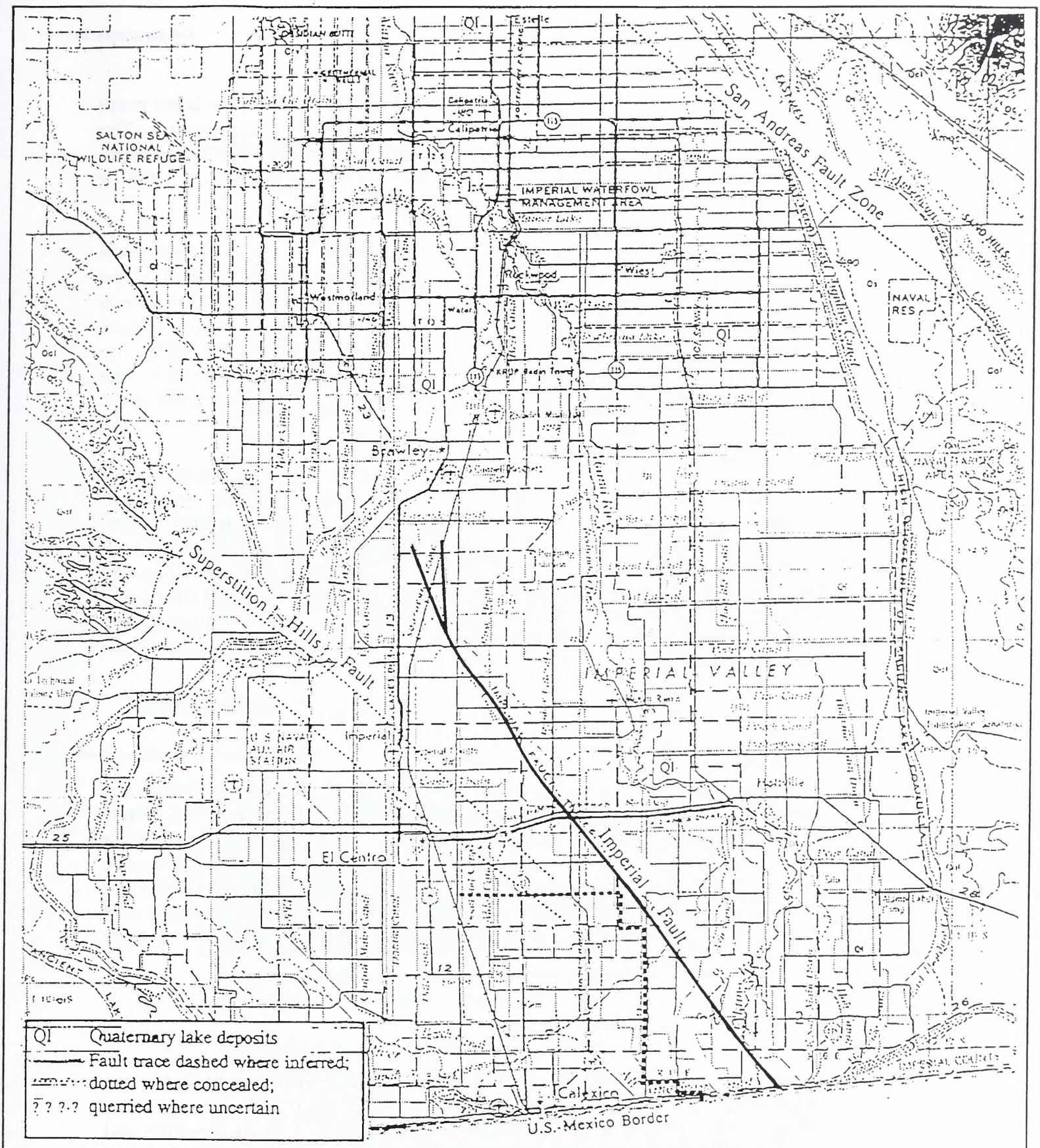
A perched water table is typically present between 36 and 60 inches below the surface in most basin soils because of seepage from canals and extensive irrigation. It can be as high as 18 inches below the surface during periods of heavy rainfall (SCS 1981). The capability of the soils under non-irrigated conditions is VIIIw, indicating that without artificial drainage, these soils have severe limitations, making them unsuitable for commercial crop production. Along the majority of the pipeline route, soils are poorly suited to intensive farming due to slow permeability, low water-holding capacity, a too-fine textured surface layer, or a problem or limitation caused by soil salinity (SCS 1981). Soils in the project area are suitable for agricultural use when properly irrigated and drained.

Subsidence

Subsidence is the gradual, local settling, or sinking of the earth's surface. It is usually the result of gas, oil, or water extraction, hydrocompaction, or peat oxidation. The Imperial Valley experiences a continuous natural subsidence toward the Salton Sea (Imperial County Planning 1990).

Seismicity

The closest fault to the proposed pipeline alignment is the Imperial Fault, which comes within approximately a half a mile to the pipeline route in the vicinity of the corners of Chick and Meloland roads and of McCabe and Barbara Worth roads (Figure 6).



Source: CDMG Geologic Map of California, San Diego--El Centro Sheet

10-06-96(SCG632)

Figure 6

------ Proposed Pipeline Route

N

LSA

Scale in milest

0 4.5

Regional Geology and Seismicity

The Imperial Fault has been active within the last 200 years. The latest event on the Imperial Fault was a 6.6M event in 1979 (Wells pers. comm.). The epicenter of this earthquake was approximately 12 miles south of the Mexican border and about 12 miles east of Mexicali. Two aftershocks of 5.0M or greater occurred five hours after the main quake.

Gas Company line 6001 suffered compressive stress during this earthquake and a fitting buckled, generating a leak. It was repaired without having to be shut down. An east-west gas lateral off this line was stretched where it traversed the fault. The line did not rupture and repair did not require shutting down the gas transport system (Imperial County Planning 1990). The maximum credible earthquake along the Imperial Fault is a 7.0M event. The maximum probable earthquake would be between a 6.8M and 7.0M event (Wells pers. comm.).

Liquefaction is the sudden loss of strength within saturated granular soils during seismic groundshaking. Liquefaction can result in significant differential settlement and/or lateral spreading. In the Imperial Valley, differential settlement has typically been associated with magnitude 6 to 7 earthquakes. During the 1979 earthquake, substantial ground spreading and liquefaction was noticed in the vicinity of the fault and along old river beds. Ground lurching within levees during earthquakes causes slumping and potential rupture. In 1979, the All American Canal levees experienced slumping (ESA 1993).

G. HYDROLOGY

No Federal Emergency Management Agency (FEMA) mapped floodplains are traversed along the pipeline route (Imperial County Planning 1990). While floods in central Imperial County are rare, they can be caused by heavy rains that overwhelm generally dormant creeks and washes. Damage to the levee along the All American Canal during earthquake shaking could result in water spilling over to adjacent fields. The Colorado River, which is generally well controlled, has in the past caused flooding along the river areas due to large releases of water.

H. NOISE

Noise sources include traffic on Chick, Barbara Worth, Meloland, McCabe, and Carr roads and aircraft operations associated with the U.S. Naval Air Facility at El Centro (which is an intermittent noise source). Noise-sensitive and potentially vulnerable noise receptors to project noise impacts include 14 residences and three small businesses located along Chick, Meloland, McCabe, and Barbara Worth roads.

The alignment passes east of Calexico and is outside city limits beyond the tie-in point. Barbara Worth Road carries only sparse traffic; however, what little traffic there is includes a substantial proportion of heavy trucks, resulting in high peak noise levels near roadside. Noise from aircraft operations probably has only a small to moderate influence on CNELs (community noise equivalent level) along this project alignment. The proposed pipeline alignment is well outside of the modelled 60 dBA CNEL contours for the U.S. Naval Facility at El Centro.

Noise levels recorded in front of similar homes and locations approximately 3 miles to the west varied from 45 to 76 dBA, with an L_{50} of 59 dBA. No traffic was observed along the road; dominant noise sources included loud construction activities across the border in Mexico, as well as animal activity nearby. The proposed project route is expected to have a similar ambient noise level.

CNEL was not directly measured, and it would be difficult to model due to the complexity of the noise environments. However, the measurement data considered along with the nature of the activities at these land uses suggest that, in the absence of short-term anomalies such as construction activities, CNELs at project locations are likely to be in the 50 to 60 dBA range.

I. AIR QUALITY

Regulatory Background

Five air pollutants have attracted the greatest regulatory concern nationwide: ozone, carbon monoxide (CO), small-diameter suspended particulate matter (PM_{10}; the "10" denotes the upper bound on the particle diameter, 10 microns), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Ambient air quality standards have been established for these pollutants by both the federal government and the State of California. Data collected at permanent monitoring stations are used by federal agencies or the state to classify regions as "attainment," if the federal or state standards have been achieved, respectively, or "non-attainment" if otherwise.

The California Air Resources Board (CARB) coordinates and oversees both federal and state air pollution control programs in California. Significant authority for air quality control within the state's 11 air basins has been given to local Air Pollution Control Districts or Air Quality Management Districts, which regulate air pollutant emissions and develop non-attainment plans within their jurisdictions.

The project would be located in the Southeast Desert Air Basin (SEDAB), a five-county region that includes all of Imperial County and the interior desert portions of Kern, Los Angeles, San Bernardino, and Riverside counties. Air pollutant control in Imperial County is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD).

Existing Regional Air Quality

Ozone is the most severe regional air quality problem in the SEDAB. Unlike many air pollutants, ozone is not emitted directly into the atmosphere, but is produced therein by a complex series of photochemical reactions involving reactive organic compounds (ROG) and nitrogen oxides (NO_x) as precursors. The SEDAB's intense sunlight and generally high temperatures during the summer months are ideal for formation of ozone. ROG and NO_x emission sources are spread throughout the SEDAB; motor vehicles are the most important single source category. Peak ozone levels in the SEDAB usually occur in areas adjacent to the South Coast Air Basin, because ozone and its precursors from this extreme non-attainment area are transported through the connecting mountain passes.

Suspended particulate matter is a composite of natural and man-made materials, including soil, biological materials, sulfates, nitrates, organic compounds, and lead. PM_{10} concentrations in southern California attain their highest ambient concentrations in the SEDAB because it is downwind of the South Coast Air Basin and because of the region's dry climate.

Indications of pollutant levels along the pipeline route were obtained by reviewing recent data collected at the nearby El Centro monitoring station (*California Air Quality Data*, CARB 1989, 1990, and 1991). The SEDAB is a non-attainment area for both federal and state ozone and PM_{10} standards.

Air Quality Improvement Programs

In response to the 1988 California Clean Air Act (CCAA) and the 1990 federal Clean Air Act Amendments (CAA), both the SCAQMD and the ICAPCD have produced plans to improve air quality and, for some pollutants, attain federal and state ambient air quality standards.

Compliance with the provisions of the CCAA is the primary motivation behind the 1991 *Air Quality Management Plan* (AQMP) developed by SCAQMD and the Southern California Association of Governments (SCAG). The AQMP proposes a stringent set of new emission control measures which both agencies believe are sufficient to guarantee attainment of federal standards for all pollutants by the year 2010. Attainment will not come easily, however. Region-wide ROG emissions reductions of almost 90 percent will be necessary to meet the federal ozone standard. State ozone and PM_{10} standards would not be achieved by the year 2010, even with the full implementation of all measures proposed in the AQMP. Future revisions of the AQMP will seek to identify additional control measures which would guarantee their attainment as well.

The ICAPCD has also compiled an *Air Quality Attainment Plan* (AQAP) recently (April 1992). Its aim is to bring the county into compliance with the state ambient air quality standard for ozone by the earliest practicable date.

The AQAP does not predict attainment of the state ozone standard and does not quantify the effect of inter-basin transport on county ozone levels. However, it does require Best Available Control Technology (BACT) and emission offsets for all new, modified, or relocated pollutant sources, and includes strategies to reduce vehicle trips, vehicle miles traveled, and traffic congestion. The AQAP does not address PM_{10} standard attainment; this will be handled at the state level at a later date.

J. CULTURAL RESOURCES

A records and literature search and field survey were conducted for the Area of Potential Effects (APE) of the pipeline project. The results and recommendations of that effort are detailed in a separate cultural resources technical report, which made a "no effect" determination. The following provides a summary of key findings.

A records search was conducted in November 1994 at the Imperial County Archaeological Information Center located in Ocotillo, California for the project route along Chick, Meloland, McCabe, and Barbara Worth roads. A subsequent records search was conducted in November 1996 for the 2.1-mile alignment east of Barbara Worth Road.

Results of the records searches and consultations at the information center indicated that the project area had not been previously surveyed. The potential for encountering prehistoric resources within the APE is extremely low. The elevation of the area in question is 45 feet below mean sea level, indicating that it was inundated by the prehistoric Lake Cahuilla. If any prehistoric resources are present, they are probably extremely disturbed due to extensive historic farming in the area. The only cultural resources likely to be present in the APE are historic sites related to settlement and Imperial Valley agriculture.

The only potentially significant cultural resources are the water canals. These are the All American, New Briar, and Alamitos canals. LSA visited the El Centro Library to acquire information about the history of the canal system. In addition, LSA requested a map search by the IID to determine the approximate ages of the canals under consideration.

Field surveys indicated that the pipeline alignment is composed of road shoulder that has been disturbed through grading and maintenance activities. Along most portions of the project alignment, the APE is flanked by asphalt roads and plowed fields. The entire landscape is one of historic alteration through agricultural use, and the APE has been completely altered to accommodate crop farming.

The All American Canal was completed in 1941 and is of sufficient age and historical significance to be considered potentially eligible for the *National*

Register of Historic Places pursuant to 36 CFR 60.4. The New Briar and Alamitos canals are also potentially eligible for the *National Register*.

K. PALEONTOLOGICAL RESOURCES

An archival records review was conducted at the Regional Data Base at the San Bernardino County Museum; the Los Angeles County Museum of Natural History, which includes the fossil recovery data of the University of California at Los Angeles; the California Institute of Technology; and the Museum of Paleontology, University of California, Berkeley. Pertinent published and unpublished paleontological/geological literature was reviewed. No field survey was conducted because the disturbed nature of the agricultural lands and the presence of paved roadways minimize the likelihood of finding useful surface indicators of paleontological resources.

The project area is underlain entirely by Quaternary lake deposits. No fossil remains are definitely known from this rock unit, and no fossil site is recorded from the pipeline right-of-way. The Quaternary lake deposits in the pipeline right-of-way and within the proposed depth of excavation for the pipeline trench (5 feet) have only a low potential for yielding fossil remains and, therefore, are considered to be of low paleontologic importance.

L. HEALTH AND SAFETY

The U.S. Department of Transportation regulates the design and operation of natural gas pipelines through 49 CFR, Parts 190, 191, and 192. Design and safety standards (e.g., wall thickness, pressure, valve spacing, and cover) for pipelines are determined, in part, by relative location to human-made structures. These areas extend 220 yards on either side of the centerline of any continuous one-mile length of pipeline.

The pipeline would be located within an area of land uses under Class I (i.e., ten or fewer buildings intended for human occupancy). Fourteen rural residences and three small businesses are located along Chick, Meloland, McCabe, and Barbara Worth roads.

Gas Company procedures for design, construction, testing methods, operation, and maintenance of the pipeline would conform with or would be more stringent than the requirements of CPUC General Order 112-E, based upon 49 CFR Part 192. Personnel experienced in pipeline construction work would be employed. Federal OSHA and Cal OSHA requirements would be followed to protect worker safety. Surveillance would be performed at intervals which either meet or exceed the frequencies mandated in G.O. 112-E.

IV. POTENTIAL IMPACTS AND MITIGATION MEASURES

The pipeline alignment would be entirely within existing disturbed areas, such as county roads and canal rights-of-way. The metering station is planned to be constructed in an already disturbed canal right-of-way due north of the All American Canal and east of the U.S. Port of Entry.

The No-Action Alternative is the same as the already approved line 6902 project (i.e., the southerly 12.9 miles). Although there are minor quantitative differences between the already approved and the proposed project (Table 2), the impacts associated with both are not significantly different.

A. LAND USE

Potential Impacts

Land use impacts can be defined as effects that would result if the project adversely affected existing land uses, or conflicted with adopted land use plans and policies. Because the pipeline would be located primarily within existing roadway and canal easements, no permanent or significant impacts on open space or agricultural land uses along the alignment are anticipated, with the exception of the 35 by 100-foot meter station site.

Construction Impacts

Construction could result in temporary agricultural impacts. The temporary working strip could encroach as much as 20 feet into adjacent agricultural land over part of the alignment. Construction may prevent agricultural activities within this encroachment area for up to two months. The maximum loss of about 9.2 acres of agricultural land for one to two months would be a negligible impact when compared to the total agricultural acreage within the project vicinity.

During the construction period, the 14 rural residences and three small businesses may experience traffic, visual, and noise impacts. According to the General Plan for Imperial County, future land uses along the proposed route include urban development and agriculture. The proposed project would conform with these uses.

Environmental Justice

Presidential Executive Order 12898, "On Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," issued on February 11, 1994, requires that the impacts of federal actions on minority and low-income populations be analyzed to avoid disproportionate adverse burden on these groups.

The pipeline alignment would come close to 14 rural residences and three small businesses. Some of the residences are occupied by non-minority farmers, living on their own land. These residences would not qualify either as low-income or minority. However, the remaining residences and one of the small businesses are predominantly Hispanic and low-income. People in these houses and in the small business would experience some increase in noise and traffic during construction, but these effects would be temporary and would not adversely burden local residents. No disproportionately high or adverse human health or environmental effects would occur from project operation.

No-Action Alternative

Under the No-Action Alternative, three small businesses and 11 residences would also be affected; that is, two less residences. Under the No-Action Alternative, a maximum of 8.7 acres rather than 9.2 acres of agricultural land could be temporarily taken out of production.

Mitigation Measures

1. To minimize potential land use conflicts resulting from short-term visual, traffic, and noise impacts associated with pipeline construction adjacent to the residences and small businesses, the Gas Company shall undertake measures identified in those respective sections of this document.

2. The Gas Company shall enter into a agreement to reimburse the landowners for the permanent use of the meter station site.

3. The Executive Order on environmental justice mandates opportunities for community input by low-income and minority groups in the NEPA process, including accessibility of documents and notices. Pursuant to the Executive Order, the lead agency shall notify the affected residents and businesses of the proposed project and of the availability of this Supplemental Environmental Assessment for their review and comment.

   The BLM as the lead agency shall send a letter in English and Spanish to this effect to the residences and businesses along the proposed route at the same time as the general public distribution of the Supplemental Environmental Assessment. The Gas Company shall provide the BLM with a list of addresses of residences and businesses along the proposed alignment. All the residences and small businesses along the proposed route shall be notified to ensure inclusion of all minority or low-income constituents, even though all recipients may not qualify as either minority or low-income.

B. SOCIOECONOMIC CONSIDERATIONS

Potential Impacts

The proposed pipeline would result in both positive and negative socioeconomic impacts. Construction workers would require housing, receive an income, and generate taxable revenues. Beyond property taxes paid by the operator, no local socioeconomic effects would be associated with subsequent operation of the pipeline. The only potentially significant adverse impact would be a minor temporary decrease in the availability of temporary housing in the Imperial Valley. An impact may be considered significant if it results in a 10% or more variation in the existing condition of the socioeconomic indicator. The project would not result in such a variation.

No-Action Alternative

This alternative would have slightly greater, positive and negative socioeconomic impacts during construction, because the labor force would be doubled. The wider working strip associated with the No-Action Alternative would result in a potential for approximately 15% more agricultural land temporarily affected.

Mitigation Measures

1. Where the construction right-of-way constrains agricultural activities, the Gas Company shall reimburse landowners for the temporary loss of agricultural revenues.

2. The Gas Company shall enter into a agreement to reimburse the landowners for the permanent use of the meter station site.

C. VISUAL RESOURCES

Potential Impacts

During construction, an increase in debris and surplus materials, such as welding rod, pipe sections, discarded equipment, paper, plastic, and metal fragments, could occur along the right-of way. This debris would be cleaned up immediately behind the equipment as construction progressed. These materials could be aesthetically unpleasant during the construction period, but would have no long-term impact after debris is removed. The Gas Company would monitor the clean-up of the project site and conduct follow-up inspections and therefore the temporary increase in debris and surplus materials would not result in a significant visual impact. Except for a few localized areas described below, construction would not result in significant short-term visual impacts along the alignment.

The pipeline would be trenched. The proposed 35-foot by 100-foot meter station is planned to be located in a IID canal easement due north of the All American Canal embankment. No residences or businesses would be visually impacted.

A basic construction zone of 50 feet in width would be required along the route. Construction along this route would not result in significant short-term visual impacts along the alignment, because of the existing low population in the corridor area and the presence of agricultural lands adjacent to an existing right-of-way. No significant long-term visual impacts would be expected.

No-Action Alternative

Under this alternative, the existing visual quality of the right-of-way would experience similar impacts to those occurring under the proposed project. The temporarily disturbed working strip under the No-Action Alternative would be 25 feet wider with a resultant 34% greater total area disturbed (Table 2). The No-Action Alternative is 12% shorter than the proposed (i.e., 12.9 miles compared to 14.4 miles). Both alternatives would affect the same sensitive receptors, the 14 rural residences and the three small businesses.

Mitigation Measures

The following mitigation measures would partially offset potential adverse visual impacts.

1. All valves and other exposed materials shall be painted in an earth-tone color, such as light brown (Munsell soil color chart matrix color 10 YR, 6/6 or 10 YR, 7/6), so that they would better blend with the surrounding area.

2. The area cleared of vegetation for the construction zone shall be as narrow as possible (less than 50 feet) so that visual quality and erosion impacts are minimized.

D. TRAFFIC

Potential Impacts

No long-term traffic-related impacts would be generated after construction of the proposed underground pipeline. Short-term construction-related impacts could be created along Chick, Meloland, McCabe, Barbara Worth, and Carr roads and along the All American Canal levee road. This level of temporary disturbance would not be significant.

No-Action Alternative

Under the No-Action Alternative, short-term construction-related impacts could be created along Chick and Barbara Worth roads comparable to those associated with the proposed alternative.

Mitigation Measures

The following measures are identified to offset potential temporary adverse circulation impacts.

1. The Gas Company shall provide adequate signage and/or flag personnel at Chick, Meloland, McCabe, Barbara Worth, and Carr roads and along the levee road for the All American Canal. The Gas Company shall redirect commuters to the satisfaction of the Imperial County Public Works Department. These plans shall be submitted to the Imperial County Public Works Department for review prior to construction. These roads shall not be completely blocked during the construction process, except for short periods, and never overnight.

2. At the end of each work day, the Gas Company shall provide that all trenches in or adjacent to roadways be completely protected, covered, or filled in, in coordination with the Imperial County Public Works Department. This procedure is meant to prevent traffic hazards and ensure flow of traffic.

3. The Gas Company shall return all paved and unpaved roads to their original condition, to the satisfaction of the Imperial County Public Works Department, after each section of the pipeline is constructed.

4. Existing public and private roads shall be used as much as possible for access to the pipeline right-of-way.

E. VEGETATION AND WILDLIFE

Determination of No Effect

The project site supports ruderal, agricultural, and developed land uses. No natural habitat is present. No threatened or endangered species were found on-site, nor were any expected to be found on-site based on the unsuitable habitat. The determination of this Environmental Assessment is that no threatened or endangered species will be affected.

Potential Impacts

Existing human impacts on biotic resources are heavy throughout the project area. No native habitat is extant, nor are jurisdictional wetlands present in the

working strip. All impacts would be experienced during construction and would be temporary; no permanent impacts were identified.

Impacts of undetermined magnitude are potentially possible, although unlikely, during construction activities. These include harassment of wildlife by pets, collection or destruction of native plants and wildlife, vehicle activity and placement of storage areas in sensitive habitat off the working strip, entrapment of wildlife in pipes, attraction of wildlife by improper deposition of trash, introduction of hazardous materials, accidental fires, and discharge of hydrostatic test water in sensitive habitat.

Native vegetation has been mostly eliminated from agricultural and developed areas. These habitats have marginal value as cover for some species of birds, especially migrants and wintering species. Project impacts on wildlife habitat would be insignificant.

No state or federally listed threatened or endangered animals or plants would be affected by this proposed project. Burrowing owls were observed along the road sides and canal levees. Loggerhead shrikes were sighted within 3 miles of the road sides and proposed right-of-way. Both species are California species of special concern. These special status species are not included under the protection of either the state or federal Endangered Species Acts. Nesting habitat for the shrike is not present; use of habitat on the project site by the shrike would be incidental.

Impacts on burrowing owls would be significant, if not mitigated. Burrowing owls could be trapped inside their burrows and killed due to construction activities. The owls would be particularly vulnerable during the nesting season from approximately February to July. In that time, adult owls are more likely to hide within their burrows, than flush (fly away), when disturbed. Eggs and juvenile owls in nest burrows would also be at risk during that season.

No-Action Alternative

Similar habitat and species would be affected by the No-Action Alternative.

Mitigation Measures

These mitigation measures are designed to reduce the impacts to a level of insignificance.

1. ***Worker Education Program***. This program shall consist of printed materials and a briefing session conducted by a biologist to familiarize construction personnel with biological resources along the route, particularly special status species such as the burrowing owl.

2. ***Pets***. To prevent harassment, mortality, or destruction of dens and burrows of wildlife, pets shall not be allowed on the working strip, staging areas, access roads, and other sites required for construction activities.

3. ***General Plant and Animal Protection***. No intentional killing or collection of either plants or wildlife shall be permitted.

4. ***Designated Construction Zone***. Project-related vehicle traffic, construction activity, and equipment storage shall be restricted to established roads, designated access roads, the working strip, storage areas, staging and parking areas, and other designated project areas. This includes the placement of portable toilet facilities.

5. ***Storage Areas***. To minimize permanent and temporary construction disturbances, storage facilities shall be located at sites that have previously been disturbed. Storage areas shall be examined during preconstruction surveys for all state-listed and federally listed species and other special status species.

6. ***Pipe***. The open ends of all in-place pipeline segments (i.e., in the trench) shall be capped, until backfilled, to prevent animals from entering. The inside of all pipe shall be inspected before being moved.

7. ***Sanitation.*** Food items may attract sensitive species and potential predators to the construction site at night, consequently exposing them to construction-related or other hazards. Construction sites shall be maintained in a clean condition. This duty shall be the responsibility of the Gas Company and its contractors. All trash (e.g., food scraps, containers, wrappers, cigarette butts, and equipment) shall be properly disposed of offsite. All food-related trash and litter (e.g., wrappers, cans, bottles, food scraps, and cigarette butts) shall be placed in closed containers and disposed of daily. The working strip shall be inspected daily to remove trash or litter that may not have been disposed of properly.

8. ***Hazardous Materials.*** Hazardous materials that are most likely to be used in construction areas include fuels (gasoline and diesel), lubricants, and solvents. If hazardous material is discharged from the system or from containers or vehicles during any phase of construction, operation, or termination of the pipeline, the control, removal, disposal, and cleanup shall be the responsibility of the Gas Company. Refueling of these materials shall not be allowed within 200 feet of a perennial stream or canal. The storage of these materials near streams shall be consistent with California Fish and Game Code Section 5650 and all other federal and local regulations.

9. ***Fire Management***. Construction equipment shall be equipped with shovels and fire extinguishers. Workers shall be trained in their use.

Fire resistant mats and/or wind screens shall be placed on the ground below welding and grinding operations whenever dry vegetation is present. Supervisors shall have the names of local fire fighting agencies and ready access to telephones to make contact. In the event of an accidental fire that cannot be quickly contained with fire suppressants on hand, fire fighting agencies shall be contacted and their directions followed.

10. ***Preconstruction Surveys***. The working strip shall be surveyed by a qualified biologist prior to clearing. One survey shall be conducted within 30 days of clearing to determine presence or absence of special status species. (Note, the 30-day preconstruction survey may be combined with mitigation measure 11, below, the 10-day passive relocation of burrowing owls.)

11. ***Burrowing Owl***. One or more biological monitors shall be present during initial grading and clearing in habitat that can potentially support burrowing owls. Construction activity shall avoid burying active burrowing owl nests. Soil stockpiles and vegetation stockpiles shall not be placed on any active burrows. The breeding season for burrowing owls is generally February through July.

    Nonbreeding Season Protocols. Active burrows shall be identified in the preconstruction survey. These burrows shall be fitted with one-way doors approximately 48 hours or more before ground-clearing activities. This "passive relocation" of burrowing owls shall be conducted within 10 days of ground disturbing activities. The one-way doors would allow owls to escape from the burrows but not to return. Burrows determined to be within the working strip and to be empty by the biologist shall be filled in with dirt. The biologist may determine occupancy of burrows by either detailed observations, careful digging, or use of a fiber optic scope. Burrows in or within ten feet of the area to be cleared shall be fitted with one-way doors. After pipeline construction is completed, the one-way doors shall be removed.

    Breeding Season Protocols. In the breeding season, active burrows shall be identified in the preconstruction survey. A fiber optic scope shall be used to determine the contents of the burrows. Those burrows with young or eggs inside shall be avoided. Those burrows being used by burrowing owls, but without eggs or young, shall be fitted with one-way doors as described above. Those determined to be within the working strip, but inactive, shall be filled with dirt. The biologist shall properly notify CDFG and USFWS of these activities and obtain permits, if necessary.

12. ***Hydrostatic Test Water Discharge***. Water shall be discharged into an existing wash or canal. As part of the preconstruction survey, the biologists shall survey the identified areas where water would be

discharged after hydrostatic testing. Occurrences of sensitive species shall be documented and appropriate measures (see above) taken to avoid impacts.

13. ***Cleanup***. After construction is completed, a final construction corridor cleanup shall include removal of all stakes, flagging, barrels, cans, drums, accidental spills, and other refuse generated by construction. No shrub material or other plant cover shall be disturbed during this process.

14. ***Final Inspection***. A biologist also shall make a final inspection of the completed construction project to assess compliance by the Gas Company. Within 90 days after completion of construction and post-construction cleanup, a post-construction compliance report shall be prepared to describe and document all monitoring efforts, mitigation compliance, and deviations from the mitigation plan; outline follow-up surveys; and provide recommendations for future projects of this type.

F. GEOLOGY, SOILS, AND SEISMICITY

Potential Impacts

Soils

Erosion. Construction excavation would result in temporary piling of soil alongside the trench. This material would be subject to wind and rain erosion until recompacted to 90% or greater compaction. Because of the short duration of the storage of this material in piles (generally around one week) and the level terrain, this condition would not constitute a significant impact.

Corrosion. Corrosive soils could damage the pipeline by corroding the pipe. Corrosion would be mitigated through use of pipeline coatings and cathodic protection.

Seismicity

Seismic impacts depend on many variables: earthquake magnitude, distance to epicenter, depth of focus, duration of shaking, intensity of shaking, near-surface soil and geologic conditions, and structural type and design. Earthquake-associated damage could be caused by moderate to strong ground motion (shaking), ground failure, and fault displacement.

Strong Ground Motion. The proposed pipeline consists of a welded steel pipe buried below the surface of the ground. Such a buried pipe performs well when subjected to ground shaking. The pipe may be damaged only if the ground around the pipe fails or ruptures.

Ground Failure. Ground failure due to seismic shaking could take place in several forms: settlement, liquefaction, and landsliding. Settlement could occur when loose granular soils are subjected to shaking by the earthquake. Liquefaction could occur when these soils are saturated with water. County maps indicate that loose granular soils subject to liquefaction may be present in ephemeral streambeds. However, no streambeds are traversed by the pipeline route. The potential for seismically induced landslides is non-existent due to level topography.

Fault Displacement. As noted in the Geology section of the Setting chapter, the proposed pipeline route would come within approximately one half a mile of the main trace of the Imperial Fault. The pipeline could be subject to ground rupture and could suffer some compressional stress.

No-Action Alternative

This alternative would result in similar erosion potential and exposure of the pipeline to corrosion. Seismic hazards would be marginally greater with the No-Action Alternative, which would intersect the Imperial Fault instead of avoiding it by a half a mile.

Mitigation Measures

The following features have been incorporated into the pipeline design to minimize the effects of various potential hazards in the environment.

1. ***Seismic Shaking.***

    a. The pipeline shall be designed so that it would eliminate or reduce adverse effects from moderate to severe seismic shaking.

    b. Pipeline maintenance crews shall inspect for potential ruptures and report any fires to the appropriate fire protection agency.

    c. Crews shall be trained to respond appropriately to fires, and at a minimum shall carry shovels and fire extinguishers in their vehicles.

2. ***Erosion.***

    a. Erosion control procedures shall be used to minimize potential problems. An erosion control plan shall be developed as necessary as part of the required Stormwater Pollution Prevention Plan (SWPPP) in compliance with the Clean Water Act regulations for stormwater runoff pollutant control. That SWPPP shall be prepared prior to the start of construction activities.

b. The area cleared of vegetation for the construction zone shall be as narrow as possible (less than 50 feet) so that visual quality and erosion impacts are minimized.

c. The rate of discharge of the test water shall be controlled by use of an energy dissipator/flow disperser to minimize erosion of local terrain in accordance with RWQCB requirements.

d. Fugitive dust control measures identified in the Air Quality section shall be required to reduce wind erosion.

e. All disturbed soil areas shall be recompacted upon completion of construction.

3. ***Corrosive Soils.*** The pipeline shall be coated and underground portions shall be cathodically protected to minimize the effects of highly corrosive soils.

G. HYDROLOGY

Potential Impacts

Trenching activities would not alter any natural drainages. The pipeline would, however, run under or over a number of IID irrigation facilities. Trenching could subject affected areas to minor levels of increased erosion. After construction, the alignment would be restored to its original contours. The pipeline would be bored under the All American, Alamitos, and New Briar canals, avoiding the canals' embankments. Irrigation, irrigation runoff, and stormwater runoff is controlled by the IID's series of canals, laterals, and drains, which ultimately empty into the Alamo River and the Salton Sea. Local siltation and erosion effects may occur near the construction area. These effects on surface hydrology are expected to be minimal.

Approximately 470,000 gallons of water would be required for hydrostatic testing of the pipeline. This water would most likely be obtained from the All American Canal. The test water would either be discharged by spreading in accordance with RWQCB regulations, discharged into a drainage canal, or returned to irrigation canals for use. For spreading, the rate of discharge of the test water would be controlled to prevent erosion of local terrain. Without mitigation, test waters discharged into unlined drainages could result in high erosion hazards. In addition, this test water may contain trace amounts of rust and particles that are by-products of factory steel pipe construction.

No-Action Alternative

Erosion hazard and the need for erosion control measures would be similar under this alternative. Natural flood drainages and IID irrigation and drainage

facilities would be similarly affected, although the amount of discharge would be approximately 360% more (1,500,654 gallons).

Mitigation Measures

The following measures are identified to offset potential adverse effects during construction and testing of the proposed pipeline.

1. The rate of discharge of the test water shall be controlled by use of an energy dissipator/flow disperser to minimize erosion of local terrain in accordance with RWQCB requirements.

2. To control erosion of unlined canal sides from possible discharge of hydrostatic test water, the rate of discharge of the water into the canal shall be controlled and other erosion control measures shall be employed.

H. NOISE

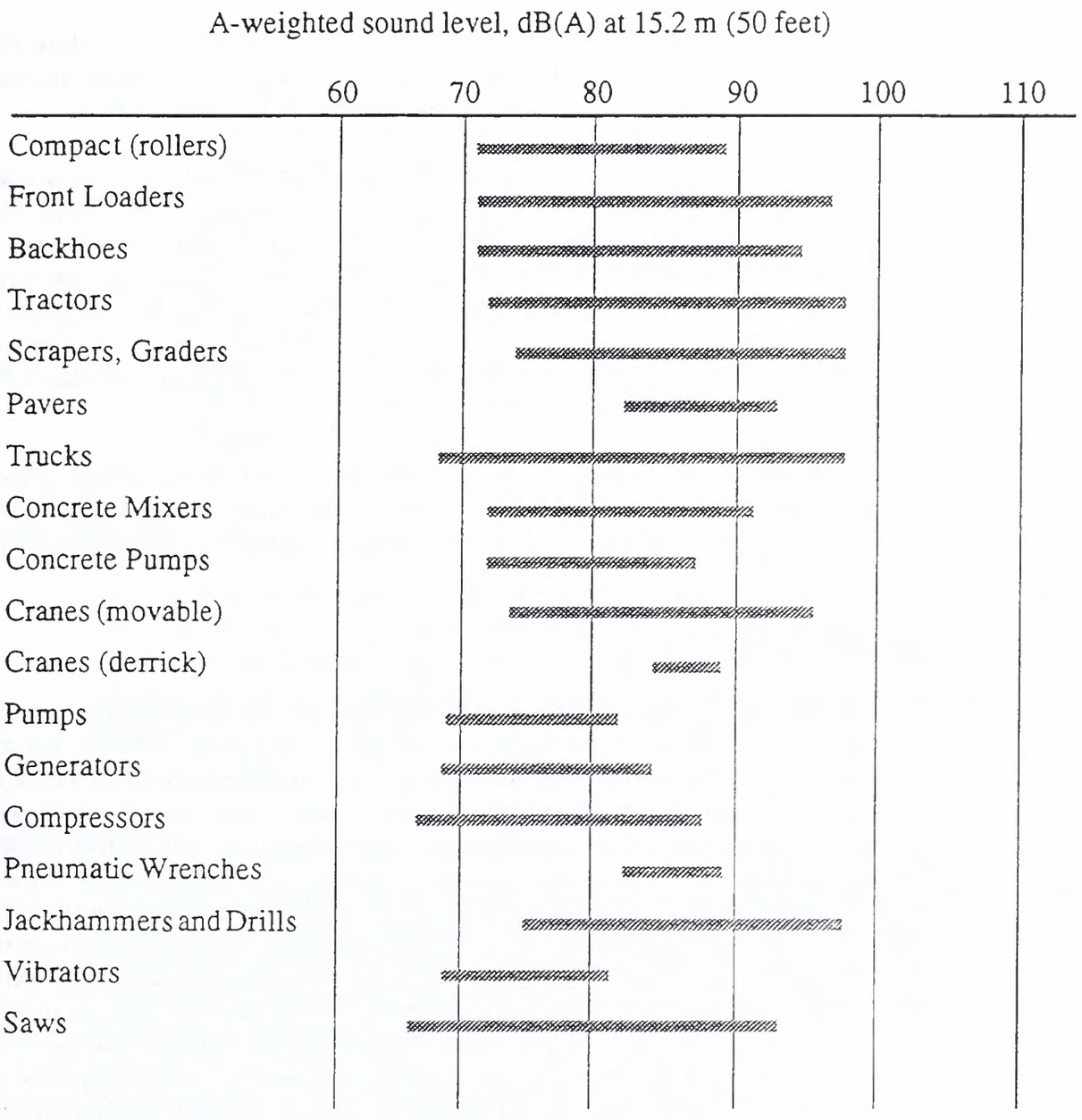
Potential Impacts

For the purposes of this analysis, an increase of three dBA or more in CNEL constitutes a significant noise impact whether or not it causes or contributes to exceeding any of the standards discussed above. An increase in one dBA or more in CNEL will constitute a significant noise impact if it causes or contributes to exceeding any of the standards discussed above. These increments are based upon studies of the minimum noise increase distinguishable by the human ear.

Potential sources of project noise impacts include construction activities and project operation and maintenance activities. Operation of the project would produce only negligible noise impacts; the pipeline and the metering station would generate minimal noise, and vehicle trips associated with pipeline maintenance would be inconsequential. The only maintenance activity that could produce potentially significant noise impacts would be the venting of natural gas. Therefore, this analysis focuses on construction impacts and blowdown events.

Construction Noise

In a worst-case scenario of project construction noise impacts, noise from construction activities would overwhelm background ambient sources at all worst-case receptor locations. Noise emission data for relevant types of construction equipment have been obtained from a manufacturer (Caterpillar Inc.), and from Environmental Protection Agency (EPA) data (Figure 7). The homes along the route could be exposed to maximum noise levels in the mid-



Source: *Handbook of Noise Control*, by Cyril M. Harris, editor, 1979.

11-07-96(SCG632)

Figure 7

LSA

Noise Levels Typical of Construction Equipment

70s dBA and a CNEL in the low 70s dBA. In addition to exceeding CNEL standards, these noise levels are likely to cause disturbance at these structures, which would be occupied during closest approach of construction.

Pavement breaking could raise peak noise levels at nearby locations several decibels and could influence CNEL slightly. Pavement would need to be broken at road intersections, except at the crossings of highways 98 and 111, where the pipeline would be bored under. Sensitive receptors in the vicinity of construction activities involving pavement breaking would be a single house each at or near the intersections of Meloland and Chick roads, Meloland and McCabe roads, and Carr and Barbara Worth roads and along Meloland Road between Chick and McCabe roads.

Because noise levels at each of these locations would likely exceed Imperial County CNEL standards for at least one day and as many as a few days, project impacts at these locations would be considered significant but short term.

Blowdown Noise

During the annual blowdowns at the metering station immediately north of the All American Canal, noise receptors would be adversely affected. Sensitive receptors in the vicinity include the Port of Entry facilities 1.5 miles to the east and rural residences less than 2 miles away to the northwest. Noise levels at the metering station vent stack during a blowdown are estimated to range between 110 and 125 dBA. Actual noise levels would depend on the amount of pressure in the line, the release rate, and the diameter of the venting stack. The proposed metering station would have a portable silencer used to muffle the venting noise in semi-residential areas and when the situation warrants its use. Use of the portable silencer is estimated to lower the venting noise to between 95 and 100 dBA. For comparison, using the silencer can lower the nuisance level of the venting noise to enable conversation on the opposite side of the road (50 to 65 feet away) while venting is occurring (Tanner pers. comm.).

No-Action Alternative

Short-term construction impacts under the No-Action Alternative would be similar to those under the proposed. The Port of Entry is further away, but the rural residences are closer.

Mitigation Measures

The following mitigation measures are identified for incorporation into project plans.

1. ***Construction Scheduling.*** Occupants of each of the identified noise-sensitive uses along the pipeline route shall be contacted before construction activity begins in their vicinities.

2. ***Construction Equipment.*** The contractor shall be required to ensure that mufflers/noise controls on available equipment are in good working condition.

3. ***Minimize Use of Loud Signals.*** The use of loud signals shall be avoided in noise-sensitive areas in favor of warning lights, except those required by state law for the protection of personnel.

4. ***Silencer.*** The Gas Company shall utilize a silencer during routine blowdowns within semi-residential areas or when a situation warrants its use.

I. AIR QUALITY

Adverse long-term local air quality impacts are not expected to occur. The proposed project would likely have beneficial long-term impacts as the use of gas is substituted for oil in future development. However, the proposed project could have significant short-term impacts during the construction phases.

Potential Impacts

SCAQMD has established criteria whereby the significance of construction-phase air pollutant emissions is to be judged *(CEQA Air Quality Handbook*, SCAQMD, April 1993). Project construction air pollutant emissions that equal or exceed the following threshold levels would be considered significant and need to be mitigated:

• ROG	75 lbs./day	2.5 tons/quarter
• NO_x	100 lbs./day	2.5 tons/quarter
• PM_{10}	150 lbs./day	6.75 tons/quarter

ICAPCD has not established similar thresholds in its jurisdiction. For the purposes of this analysis, however, the SCAQMD thresholds have been used to determine project significance.

Construction vehicle and equipment exhaust contains ROG and NO_x. Emissions of ROG and NO_x are of concern because of their adverse effect on regional ozone levels. About 50% of the dust generated during clearing, excavation, grading, construction, and other operations would be PM_{10}. PM_{10} emissions are of concern because of their adverse effects on local ambient air quality along the project alignment. The residences along the route would be particularly vulnerable to such PM_{10} impacts.

The natural gas released during blowdown activities is largely composed of methane, which is not an ozone precursor. Therefore, no significant air quality problems would result from these venting occurrences.

Table 4 shows the daily and quarterly emission totals associated with the various types of construction equipment and activities for non-attainment pollutants in the Southeast Desert Air Basin (SEDAB). NO_x and PM_{10} emissions would exceed the daily thresholds, while the ROG threshold would not be exceeded. No_x and PM_{10} emissions would also exceed the quarterly threshold.

No-Action Alternative

Construction impacts identified above would be similar for the No-Action Alternative. Project benefits to air quality associated with the use of natural gas instead of oil would not occur, if Mexico would not accept delivery at the terminus of Barbara Worth Road.

Mitigation Measures

The following mitigation measures are identified.

1. The Gas Company shall implement effective fugitive dust control measures required by SCAQMD Rule 403[1], which prohibits a visible plume of dust at the boundary of the project. Such measures should include the following:

    - Use water trucks or sprinkler systems to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph.
    - Limit the speed for all construction equipment to approximately 25 mph on any unpaved surface.
    - Water or securely cover all excavated material transported offsite.
    - As work progresses to areas where there are paved roads, sweep adjacent streets as needed to remove accumulated silt.

2. Limit ROG and NO_x emissions from equipment and vehicles by implementing the following:

    - Maintain existing gasoline-powered equipment per manufacturer instructions.

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[1] Although Imperial County is not within the SCAQMD, this EA recommends its application to the proposed project.

- Substitute electric-powered equipment for internal combustion-powered equipment, where feasible.
- Substitute gasoline-powered equipment (preferably, with catalytic converters installed) for diesel-powered equipment, where feasible.

3. While backfilling the pipeline, the Gas Company shall ensure dust reduction by stabilizing the excavated area. Techniques used shall include, but not be limited to, watering or paving to reduce fugitive dust generation onsite in a manner meeting the approval of the county public works director.

J. CULTURAL RESOURCES

Potential Impacts

The results of the site survey and the "no effect" determination have been provided as a separate technical addendum to this Supplemental EA. The proposed project will not include previously recorded historic properties. This alternative would not disturb any known prehistoric resources. Construction of the proposed pipeline would avoid direct impacts to the All American, Alamitos, and New Briar canals by boring under them.

No-Action Alternative

This alternative would have affects on cultural resources similar to the proposed alternative.

Mitigation Measures

1. The Gas Company will coordinate through the BLM with SHPO to fulfill the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended. Prior to implementation of this project, SHPO clearance shall be obtained.

2. If buried artifacts or other indications of subsurface archaeological sites are found, grading shall be halted until the finds can be evaluated and all consultations are complete. If significant resources are present which warrant a data recovery program, such shall be developed, but not implemented, until approved by the SHPO.

3. If avoidance of any as-yet undiscovered significant cultural resource in the APE is not possible, a treatment plan shall be required. This plan shall include additional fieldwork testing for any subsurface deposits and further documentation of the surface artifacts observed. The plan would be forwarded by the BLM to SHPO for approval. Until a

treatment plan is approved by the SHPO and implemented, no construction would be permitted that could jeopardize the resource.

K. PALEONTOLOGICAL RESOURCES

Potential Impacts

The route is underlain entirely by Quaternary lake deposits. No fossil remains are definitely known from this rock unit, and no fossil site is recorded from the proposed right-of-way. Excavation of the pipeline trench to a depth of five feet probably would not extend to sufficient depth in the Quaternary lake deposits to encounter rocks old enough to contain fossil remains. Adverse impacts resulting from excavation of the pipeline trench would be of low paleontologic significance because of the low potential for disturbance or loss of any scientifically important fossil remains, associated geologic and geographic site data, or unrecorded fossil site.

No-Action Alternative

This alternative would have affects on paleontological resources similar to the proposed alternative.

Mitigation Measures

Excavation of the pipeline trench is unlikely to cause disturbance or loss of scientifically important fossil remains, associated geologic and geographic site data, or unrecorded fossil sites in the Quaternary lake deposits. A mitigation program for reducing impacts on paleontologic resources, as specified in recently issued guidelines for mitigating construction-related adverse impacts on paleontologic resources, would not be required during excavation of the pipeline trench.

1. In the event that significant fossil remains were uncovered by excavation of the pipeline trench, impacts on the remains would be stopped until a paleontologist has been called to the site to evaluate and, if appropriate, remove the remains, and develop additional mitigation measures, if warranted.

L. HEALTH AND SAFETY

Potential Impacts

Construction

Construction operations such as grinding and welding could result in fires near the pipeline. Certain materials that may be used during pipeline construction could present a hazard. Fuels, which would be delivered to the site in tank trucks, are a potential concern. The Gas Company would implement measures that would minimize this potential hazard to a level of insignificance.

Operation

Geologic hazards and mitigations are evaluated in the Geology, Soils, and Seismicity section of this chapter. Implementation of the project would result in the transport of natural gas under a typical pressure of 350 to 550 psi with a maximum of 720 psi. The gas could form liquid condensates. To minimize this potential, the gas would be of pipeline quality and any liquid condensate would be removed by drip valves. Potential adverse impacts from pressure and condensate during transport of gas within the pipeline would be nonexistent.

Heavy excavation equipment may crack or punch a hole in a buried pipeline, but would not likely sever it. To minimize the possibility of future construction adversely affecting the line, signage would be included to clearly delineate the alignment. As part of the project, warning signs at intersections with public rights-of-way and other locations would be placed to indicate the high-pressure gas line. With this signage and the isolation of the line, damage from future heavy excavation equipment would be relatively insignificant.

Accidents from leaks or external damage to the pipeline could result in the release of natural gas. If the released gas is ignited, it could burn and/or explode and pose a risk to structures or persons living in or traveling through the area. The significance of this impact would depend on its location along the route.

The potential hazards to pipeline maintenance personnel during blowdown events are expected to be below a level of significance, because of the safety procedures that are incorporated into the activity. During blowdowns, all maintenance personnel are equipped with safety gear and ear protection. The valves are opened remotely at a distance of at least 30 feet from the discharge point. The gas is released straight upward from stacks that are 8-10 feet high.

Because much of the pipeline would be placed away from human habitation, hazards would be minimal along most of the alignment. Facilities in the

pipeline right-of-way could be damaged as a result of a rupture in the pipeline. Adjacent future developed areas of Mexico could also be affected.

As part of the proposed project, the pipeline would be designed, constructed, operated, maintained, and monitored to conform with previously discussed orders and regulations. Consistency with these requirements is expected to minimize to a level of insignificance the danger to persons and structures.

No-Action Alternative

Under this alternative, risks of hazard to health and safety from pipeline construction and possible leaks or ruptures from the pipeline's subsequent operation would be similar to that of the proposed alternative.

Mitigation Measures

No further mitigation measures are recommended. Implementation of the safety mitigation measures in the Geology, Soils, and Seismicity and Hydrology sections of this document will mitigate potentially adverse impacts to below a level of significance.

V. CUMULATIVE IMPACTS AND GROWTH INDUCEMENT

A. INTRODUCTION

Definition

NEPA Guidelines (BLM 1992) define a cumulative impact as an impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or persons undertake such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Incremental activities and multiple sources combine to create cumulative impacts.

Reasonably Foreseeable Future Actions

Among the reasonably foreseeable future actions for the project vicinity are a number of development projects, particularly in response to the North American Free Trade Agreement (NAFTA). These actions, which could result in cumulative environmental impacts on the region, are analyzed below.

B. REGIONAL DEVELOPMENT

Development proposed for the region and potentially relevant to project include new electrical transmission lines, irrigation canals, and the new International Port of Entry.

Imperial Irrigation District

The IID has a number of planned and proposed projects involving both electric powerlines and water delivery systems.

Southern Arizona Transmission Line Project. The IID had proposed a major electric powerline transmission project, which is currently on hold but may reactivate. The Southern Arizona Transmission Line project would run from Palo Verde, Arizona, and extend westward through Yuma, into Holtville, California, and follow northwesterly along the East Highline Canal to the electrical plant in Devers. The construction of this electric powerline is not expected to occur concurrently with the proposed pipeline project.

El Centro to Calexico Transmission Line. A second, smaller transmission line is planned between El Centro and Calexico. Details regarding the schedule for this line have not been formalized, and it is not expected that its construction will take place during construction of the proposed pipeline project.

South End Consolidation Project. IID is considering a consolidation of its water delivery and electric powerline facilities south of Holtville at the south end of the Imperial Valley. If approved by the IID board of directors, this project would involve some construction at existing equipment sites. IID does not have a projected construction schedule for this project, but the proposed gas pipeline should be installed before the South End Consolidation Project begins ground disturbing activities.

International Port of Entry

The U.S. General Services Administration, in cooperation with Mexico, is constructing a new international border crossing between the United States and Mexico. The new Calexico East Border Station project includes an access road system to the new Port of Entry on the California side. The facility is being constructed approximately 6.5 miles east of the City of Calexico. A six-lane bridge across the All American Canal will help relieve the commercial and passenger vehicle and pedestrian traffic at the existing border station. A new section of State Route 7 will be built to connect the new facility with State Route 98 and I-8. The Port of Entry is expected to be open as soon as the Mexican side is completed.

Construction of the proposed pipeline in spring 1996 could coincide with construction on the Mexican side of the Port of Entry. The two construction activities are at different locations, are supplied from different sides of the international border, and should not affect each other.

In addition, ancillary construction on the American side of the Port of Entry may coincide with proposed pipeline construction. This construction includes the related Caltrans infrastructure projects. IID may also need to make adjustments to its irrigation system to accommodate changes in the highways serving the Port of Entry. These projects could coincide with the proposed pipeline construction. Once the proposed pipeline is installed and in operation, no additional impacts are anticipated that would be related to either operation or future build-out of the Port of Entry.

C. CUMULATIVE IMPACTS

Potential cumulative impacts of these aforementioned projects that could be expected on resources assessed in this Supplemental EA are described below.

Land Use. The land uses of the area would not be significantly altered by the cumulative effects of the proposed pipeline project, the electric powerline, irrigation canal, and other road projects planned in the vicinity. Operation of the Port of Entry would substantially change regional uses. The minor maintenance activities associated with operation of the proposed pipeline would have only a negligible additive effect on land uses.

Socioeconomic Considerations. The proposed pipeline would potentially add incrementally to socioeconomic impacts associated with construction in the Imperial Valley. The potential negative impacts on available temporary housing would be exacerbated if the electric powerline, irrigation canal, or road improvement projects require importation of workers during times that coincide with peak construction of the proposed pipeline.

Construction on the Mexican side of the Port of Entry, the IID canal project, and the Imperial County road improvement projects could coincide with project construction. Construction workers would have minor impacts on local housing availability. The cumulative projects would contribute to beneficial impacts on employment, income, local trade, and tax revenues.

Visual Quality. The proposed pipeline project would not significantly increase cumulative impacts to visual quality. The Southern Arizona Transmission Line project and the new Port of Entry would increase the regional cumulative visual quality impacts. The latter, in particular, would affect the rural aspect of the region.

Traffic. Construction of the proposed pipeline, electric powerline, and irrigation projects would not significantly increase cumulative traffic in the area. Operation of these projects would have negligible traffic impacts. Operation of the new Port of Entry could have substantial traffic impacts, which would be mitigated by associated highway improvements.

Vegetation and Wildlife. The proposed pipeline project and other regional development might result in repeated disturbance that could keep vegetation in arrested seral development, alter animal behavior patterns, and prevent critical reproduction of species with low reproductive potential. In the instance of this proposed pipeline project, disturbance to habitat would be localized, temporary, and in already disturbed areas. These impacts would not be cumulatively significant if appropriate mitigation measures are applied on a project-specific basis.

Geology, Soils, and Seismicity. The proposed pipeline and other local projects would not result in significant cumulative soils, seismic, or geologic impacts because of the limited amount of required grading activities and the level topography.

Hydrology. No significant cumulative hydrologic impacts would be created as a result of the proposed pipeline or other regional projects.

Noise. Noise impacts from construction activities associated with the proposed pipeline project along with cumulative regional development could result in cumulative short-term impacts. Noise impacts from blowdown events associated with the pipeline project could result in a cumulative short-term impact. Because the probability of overlapping activities is low, this is not considered significant.

Air Quality. The ROG, NO_x, and PM_{10} emissions associated with construction activities of the proposed pipeline project and local road improvements could exceed established regulatory thresholds in the short-term. However, no long-term air quality impacts are expected from operation of these projects.

Cultural Resources. The pipeline project and other regional development would not incrementally impact cultural resources in the project region.

Paleontological Resources. Excavation of the pipeline trench for the pipeline project, in combination with other past, current, and future developments in the pipeline vicinity, would not contribute significantly to the loss of fossiliferous rocks and fossil sites that can be investigated for fossil remains because of the low potential for disturbance.

Health and Safety. Construction of the proposed IID interceptor canal and the Port of Entry projects may coincide with the gas pipeline project construction. No significant cumulative impacts are expected on health and safety. This finding is based upon the mitigation measures provided by the project regarding pipeline location, construction, and operation. The pipeline would not be transmitting natural gas during this construction period. Operation of the other proposed facilities would not conflict with operation of the pipeline project.

D. GROWTH INDUCEMENT

The overall effect of the proposed project would be to accommodate growth in the region, rather than induce growth. At the present time, the proposed project is not intended to serve customers on the U.S. side of the international border. The contributions of the proposed project, the new Port of Entry, and of NAFTA are discussed below.

Proposed Pipeline Project

The pipeline project would facilitate the replacement of the existing propane gas delivery system in Mexicali and vicinity. The increased reliability of the proposed delivery system compared with the existing gas delivery system in Mexicali may contribute to growth in the Mexicali area of Mexico.

Port of Entry

The pipeline project would be one of a number of infrastructure improvements necessary for growth in the region. The international Port of Entry could stimulate growth on both sides of the border. The Port of Entry is proposed to handle commercial vehicle traffic between the Imperial Valley and Baja California. Other infrastructure improvements that would be

necessary to accommodate growth include improved water systems, sanitary sewer pipeline and treatment systems, electricity, and roadway systems.

North American Free Trade Agreement

In addition to the pipeline project, the recently ratified North American Free Trade Agreement (NAFTA) could result in environmental impacts on the region. The implications of NAFTA approval on the physical and cultural environment of the Imperial Valley are not known. Growth projections in the Imperial County General Plan assume some development in Mexicali. The growth-inducing effects of NAFTA may or may not be significant.

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